NAVFAC Naval Facilities Engineering Command

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Installation Restoration Site 13 Offshore Sediments Record of Decision

Naval Station Treasure Island
Treasure Island, San Francisco, California

April 7, 2005

Department of the Navy
Base Realignment and Closure
Program Management Office West
1230 Columbia Street, Suite 1100
San Diego, California 92101-8571

Site 13
Record of Decision

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DEPARTMENT OF THE NAVY
Base Realignment and Closure
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San Diego, California

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ACRONYMS AND ABBREVIATIONS

Base	Naval Base
Bay	San Francisco Bay
BRAC	Base Realignment and Closure
Cal/EPA	California Environmental Protection Agency
CALTRANS	California Department of Transportation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COE	U.S. Army Corp of Engineers
COPEC	Chemical of potential ecological concern
CSM	Conceptual site model
DTSC	Department of Toxic Substances Control
EDC	Economic Development Conveyance
EPA	U.S. Environmental Protection Agency
ERA	Ecological risk assessment
ER-L	Effects range-low
ER-M	Effects range-median
FHA	Federal Highway Administration
HI	Hazard index
HQ	Hazard quotient
HSAA	Hazardous Substances Account Act
IR	Installation Restoration
LOAEL	Lowest observed adverse effect level
MLLW	Mean lower low water
NAVSTA TI	Naval Station Treasure Island
Navy	U.S. Department of the Navy
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOAEL	No observed adverse effect level
OU	Operable Unit
PAH	Polycyclic aromatic hydrocarbon
PA/SI	Preliminary Assessment/Site Inspection
PCB	Polychlorinated biphenyl
PP	Proposed Plan
PRC	PRC Environmental Management, Inc.

RAB	Restoration Advisory Board
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act
Tetra Tech	Tetra Tech EM Inc.
TI	Treasure Island
TIDA	Treasure Island Development Authority
TPH	Total petroleum hydrocarbons
TRV	Toxicity reference value
USCG	U.S. Coast Guard
Water Board	Regional Water Quality Control Board
XRF	X-ray fluorescence
YBI	Yerba Buena Island

Note: Acronyms used only once in the text or only once in a table are not defined in the acronym list.

1.0 DECLARATION

The declaration describes the decision and declares the decision satisfies the statutory and regulatory requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program. The declaration includes specific information such as site name and location, purpose of the Record of Decision (ROD), a summary of site conditions, the decision, and the statutory determinations.

1.1 SITE NAME AND LOCATION

Installation Restoration Site 13, Offshore Sediments
Naval Station Treasure Island
San Francisco, California

In 1993, Naval Station Treasure Island (NAVSTA TI) Naval Base (Base) and its offshore area were designated for closure under the Base Closure and Realignment Act of 1990. In 1996, in an effort to facilitate environmental cleanup, the U.S. Department of the Navy (Navy), in consultation with the California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC), the Cal/EPA Regional Water Quality Control Board (Water Board), and the U.S. Environmental Protection Agency (EPA), designated the offshore area of NAVSTA TI into a distinct Operable Unit (OU). The OU includes both Installation Restoration (IR) Site 13 and IR Site 27, the Former Clipper Cove Skeet Range. The NAVSTA TI Naval Base was closed on September 30, 1997. This ROD addresses Site 13 of the Offshore Sediments Area at NAVSTA TI, and excludes Site 27. Site 27 will be evaluated and documented separately through the CERCLA process.

Site 13 collectively consists of the offshore San Francisco Bay (Bay) sediments within Navy property surrounding NAVSTA TI (Figure 1). Site 13 is divided into eight offshore transfer parcels to be transferred or reassigned to three separate entities (Figure 2). The Submerged Parcel (Economic Development Conveyance [EDC] S-1) and the Marina Parcel (S-2) are planned for transfer to the Treasure Island Development Authority (TIDA) and the City and County of San Francisco. Submerged Parcels S-3, S-4, S-5, and S-6, and the Federal Highway Administration (FHA) Submerged Land Parcels (S-8 and S-9) are reversionary and will be transferred back to the State of California. Additionally, a submerged parcel (S-7) was reassigned to the U.S. Coast Guard (USCG). The property recipients for the transfer parcels are depicted in Figure 3.

A temporary construction easement was granted to the California Department of Transportation (CALTRANS) on October 25, 2000, to facilitate activities associated with construction of the new east span of the San Francisco-Oakland Bay Bridge. The FHA Submerged Parcels (S-8 and S-9) and a small section of the submerged parcel (S-7) reassigned to USCG are within the temporary construction easement area. The San Francisco-Oakland Bay Bridge is scheduled for completion in 2012.

1.2 STATEMENT OF BASIS AND PURPOSE

This decision document presents the basis for the no action decision for Site 13, Offshore Sediments, at NAVSTA TI. The no action decision was made in accordance with CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document satisfies all requirements of a ROD under CERCLA. In addition, the decision was made in accordance with the State of California Hazardous Substances Account Act (HSAA) codified in Chapter 6.8 of the California Health and Safety Code and specifically complies with Section 25356. The Statement of Reasons required by the HSAA is presented in Appendix A.

The Navy, with concurrence of the Cal/EPA DTSC and Cal/EPA Water Board, as indicated by their signatures, has determined no action is necessary at Site 13 because the sediments do not pose unacceptable risk to human health or the environment. Although not signatories, the EPA, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration, and California Department of Fish and Game have reviewed all the major documents and support the no action decision. This ROD is supported by the Administrative Record for this no action decision. The Administrative Record index for Site 13 is presented in Appendix B.

1.3 DESCRIPTION OF THE SELECTED REMEDY (NO ACTION)

This ROD sets forth the no action decision under CERCLA for Site 13 Offshore Sediments at NAVSTA TI.

Based on the information and data evaluated as part of the Remedial Investigations (RI) for Site 13, the offshore sediments do not pose an unacceptable risk to human health or the environment. Therefore, no remedial action was deemed necessary. A brief summary of the RI results used as the basis for the no CERCLA action decision is provided in the following paragraphs. Detailed information is provided in the Final Offshore Sediments OU RI report (Tetra Tech EM Inc. [Tetra Tech] 2001b).

Environmental data collected between 1992 and 2002 were used to determine the extent of contamination in sediments and to evaluate potential risks to the offshore environment. During these investigations, offshore sediment, storm drain sediment, storm water, and sediment pore water were sampled for chemical analysis, and invertebrate bioassays and tissue residue analyses were also conducted. The results were evaluated to determine which risk chemicals in the sediments might pose on ecological receptors.

During the Phase I RI in 1992, the Navy collected data to assess the offshore sediments adjacent to all of the storm water outfalls around Treasure Island (TI). Samples of storm water, storm drain sediments, and offshore sediment were collected. Additionally, sediment samples were also collected in areas corresponding to specific operations that could have resulted in accidental discharge of chemicals into the Bay. The results from this sampling effort were used to identify chemicals that might potentially affect the environmental health at Site 13.

Based on the results of the Phase I RI storm water investigation, additional offshore sediment and pore water samples were collected during a Phase II RI in 1996 to further characterize the sources, extent, and potential toxicity of chemical contamination in the offshore sediment at Site 13. The sample locations were non-randomly located along transects extending offshore from storm water outfalls or potential onshore sources. More than 100 offshore locations were sampled. As part of the Phase II RI, invertebrate bioassays and tissue residue analyses were also conducted.

The results of these two offshore investigations indicated metals, polychlorinated biphenyls (PCB), polycyclic aromatic hydrocarbons (PAH), dichlorodiphenyltrichloroethane, and other organics were the chemicals most frequently detected in sediment samples. The majority of samples where these chemicals were detected were at low concentrations when compared with the sediment screening criteria. The sample locations where these chemicals were detected were generally randomly distributed throughout Site 13 and did not identify any offshore area contaminated by onshore sources.

Two additional investigations were conducted in 2001 and 2002 to assess specific areas identified by the regulatory agencies as requiring further assessment of the offshore sediments at TI. Specifically, the regulatory agencies requested the Navy further investigate the sediments adjacent to possible onshore source areas at IR Sites 11 and 12, which may have deposited burned materials in the form of solid waste or PCB-contaminated material. Offshore samples were collected and analyzed for metals, total petroleum hydrocarbons (TPH), and PCBs. Concentrations of metals, PCBs, and TPH in the offshore sediments were found not to be elevated. These assessments indicated that no additional investigation was required.

1.4 STATUTORY DETERMINATIONS

The no action decision was made for Site 13 because the sediments do not pose an unacceptable risk to human health or the environment. Because the no action decision was made, there are no CERCLA Section 121 statutory determinations for this ROD, and a 5-year review will not be required for Site 13.

1.5 DECLARATION STATEMENT

Based on the RI evaluation of analytical data, historical information, and site inspections, the Navy, with the concurrence of the Cal/EPA DTSC and Cal/EPA Water Board, has concluded no remedial action is necessary for Site 13, Offshore Sediments, at NAVSTA TI. Furthermore, hazardous substances are not present in Site 13 sediments at concentrations above unacceptable risk levels, therefore, the 5-year review requirement of CERCLA Section 121(c) is not applicable.

James B. Sullivan
BRAC Environmental Coordinator
Naval Station Treasure Island
U.S. Department of the Navy

April 7th 2005
Date

Anthony J. Landis, P.E.
Chief
Northern California Operations
Office of Military Facilities

3-17-05
Date

Bruce H. Wolfe
Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region

March 10, 2005
Date

2.0 DECISION SUMMARY

This decision summary provides an overview of the installation and its history, environmental conditions, potential risks from sediments within Site 13 at NAVSTA TI, and the basis for the no action decision.

2.1 SITE NAME, LOCATION, AND DESCRIPTION

NAVSTA TI lies in the Bay, midway between San Francisco and Oakland, California. The Base consists of two contiguous islands: TI and Yerba Buena Island (YBI). Site 13, Offshore Sediments, consists of the surrounding offshore area that covers 538 acres.

The predominant marine habitat surrounding NAVSTA TI is subtidal with hard-bottom and soft-bottom mud substrate. A limited intertidal habitat, consisting of riprap, docks, and pier pilings covers the perimeter of TI. A sandy beach/mudflat intertidal shoreline is located at the base of Clipper Cove and a portion of the southeastern and southwestern shores of YBI; however, most of the YBI shoreline on the south and west portions of the island is composed of rocky intertidal habitat. Freshwater and wetland habitats do not exist on NAVSTA TI (U.S. Department of the Navy, Naval Facilities Engineering Command, Western Division 1990).

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

TI was built in 1936 and 1937 on the Yerba Buena Shoals; a sand spit extending from the northwest point of YBI. The island was originally used for the Golden Gate International Exposition in 1939. In 1941, in response to a Navy request, the City of San Francisco leased TI, YBI, and the surrounding offshore area to the Navy for the duration of World War II. After the war, the City of San Francisco agreed to trade the deed of NAVSTA TI to the Navy in exchange for government-owned land south of San Francisco. The Navy operated TI for various Naval activities including a medical clinic, fuel farm, service station, fire training school, waterfront facilities, ammunition storage, troop and family housing, personnel support, a brig, and a Navy and Marine Corps museum.

The IR Program was established by the Department of Defense in 1975 to identify, assess, characterize, and clean up or control contamination caused by historical disposal activities and other operations at military installations. The Navy IR Program was formally established in 1986. The IR Program is carried out in accordance with all federal, state and local laws. The primary federal laws are CERCLA, SARA, and the NCP.

The most comprehensive environmental assessment of potentially contaminated onshore sites at NAVSTA TI, before RI activities started at the Base, was a Preliminary Assessment/Site Inspection (PA/SI) completed in April 1987 (Dames and Moore 1988). In 1993, NAVSTA TI was designated for closure under the Base Closure and Realignment Act of 1990. In 1994 and 1995, the Navy conducted a thorough Environmental Baseline Survey (ERM-West, Inc. 1995). Shortly after, EPA conducted an aerial photograph survey during 1995 and 1996. Twenty-nine

potential sources of onshore contamination were identified during these two assessments. Additionally, normal onshore base operations at facilities such as the medical clinic, fuel farm, service station, fire training school, and others may have resulted in the release of chemicals to the offshore sediment area. Migration of onshore contamination to offshore areas at Site 13 was, therefore, identified as a viable possibility. Numerous storm water outfalls located around NAVSTA TI discharge into the Bay, carrying water, suspended sediment, and potential chemical residue. To address this concern and to facilitate environmental cleanup efforts, the Base Realignment and Closure (BRAC) Cleanup Team, with concurrence from the support regulatory agencies, separated the offshore area of NAVSTA TI into a distinct OU in 1996, which includes both IR Sites 13 and 27. Naval operations were shut down in 1997, and reuse of the property is currently coordinated by the City of San Francisco.

Based on sediment, storm water, and sediment pore water data collected during the Phase I and Phase II RI offshore sampling events between 1992 and 2000, the Navy finalized the RI report for the Offshore Sediments OU in December 2001 (Tetra Tech 2001b). Two additional investigations conducted in 2001 and 2002 to further investigate the sediment adjacent to possible onshore source areas at IR Sites 11 and 12 indicated no additional investigation was required.

There are no enforcement activities related to Site 13. Environmental investigations associated with Site 13 were implemented under the base-wide IR Program.

2.3 COMMUNITY PARTICIPATION

The Community Relations Plan for NAVSTA TI was updated in June 2002 (Tetra Tech 2002). The Navy maintains an active community participation program through the NAVSTA TI Restoration Advisory Board (RAB). The RAB is made up of federal, state, and local government representatives and citizens. Through regular meetings, the Navy informs the RAB of the progress of investigative activities and solicits input on planned environmental investigations and actions. In addition, the Navy issues fact sheets and newsletters to keep the general public informed of IR Program activities at NAVSTA TI and follows CERCLA community relations requirements.

The Final RI report for the Offshore Sediments OU at NAVSTA TI was completed in December 2001 (Tetra Tech 2001b). The Proposed Plan (PP) for Site 13, Offshore Sediments, was released to the public on April 1, 2004 (Tetra Tech 2004). The RI report and the PP were made available for a 30-day public review through both the Administrative Record located at Department of the Navy, Naval Facilities Engineering Command, Southwest Division, San Diego, California and the information repositories located at 410 Palm Avenue, Building 1, Room 161, Treasure Island, San Francisco, California, and the San Francisco Public Library in the Government Publications Section, 100 Larkin Street, San Francisco, California.

The notice of availability for the PP was published in the *San Francisco Chronicle* on April 1, 2004. A public comment period was held through April 30, 2004. A public meeting was held on April 20, 2004, at the Casa de la Vista, Building 271, Treasure Island, San Francisco. At this meeting, representatives from the Navy, Cal/EPA DTSC, and Cal/EPA Water Board were

available to answer questions about NAVSTA TI's offshore sediment area and describe the basis for proposing no action. The Navy's response to comments received during the public meeting and the public comment period is included in the Responsiveness Summary (Section 3.0). The public notice, roster of pubic meeting attendees, and public meeting transcript are included in Appendix C.

These community participation activities fulfill the requirements of Sections 113(k)(2)(B)(i-v) and 117(a)(2) of CERCLA, Section 300.430(f)(3) of the NCP, and the HSAA (Health and Safety Code Section 25356.1).

2.4 SCOPE AND ROLE OF RESPONSE ACTION

In addition to Site 13, the Navy has identified IR Site 27, Clipper Cove Skeet Range, as another offshore site at NAVSTA TI. These two IR sites collectively make up the Offshore Sediments OU. However, Site 27 will be evaluated and documented separately through the CERCLA process. This ROD addresses only the offshore sediments at Site 13. Additionally, a no action decision for Site 13 would not adversely affect the planned reuse or future remedial decisions for Site 27.

2.5 SUMMARY OF SITE CHARACTERISTICS AND SAMPLING HISTORY

The following sections provide a summary of the site characteristics and sampling history for Site 13.

2.5.1 Site Characteristics

Site 13 at NAVSTA TI consists of 538 acres of submerged Navy property. The depth to the bottom sediment of the TI and YBI offshore area vary greatly and range between 0 to 40 feet below mean lower low water (MLLW).

The Bay comprises separate embayments, including a deeper central region near the City of San Francisco (Central Bay) and shallower regions (Suisun Bay, San Pablo Bay, and South Bay). NAVSTA TI is located within the Central Bay region. The average depth of the Bay is about 20 feet at MLLW, while the median depth is about 7 feet (Conomos and others 1985, as cited in Nichols and Pamatmat 1988). Marked differences exist in circulation patterns within the regions of the estuary (Flegal and others 1991). The morphology and bathymetry of the Bay allow for a tidally driven exchange of water between the north and south portions of the Bay.

Water circulation and mixing are strongly influenced by seasonal winds. During the summer, strong west and northwest winds generate complex Bay-wide water circulation patterns. This circulation is superimposed on tide- and river-induced circulation, which drives resuspension and mixing of sedimentary material. Another result of the intense water circulation is oxygenation of surface sediments. This circulation, coupled by tidal and river-induced circulation, drives the mixing and re-suspension of sedimentary material at Site 13.

The current understanding of processes governing sediment transport in the Bay is largely qualitative. Approximately 80 to 90 percent of sediment entering the Bay system is a product of soil erosion in the Sacramento and San Joaquin rivers drainage basins (McDonald and Cheng 1993; Krone 1979); the remainder of sediment is a result of erosion of lands adjacent to the Bay system. A 1979 U.S. Army Corps of Engineers (COE) report provides the results of a study that showed the net differences between bathymetric surveys taken 35 years apart in the Bay and delta system (COE 1979). The results presented in the COE report and the net bathymetric changes between 1955 and 1990, depicted in Figure 4, show the shoreline along the northern, eastern, and southern regions of TI and YBI are net depositional areas, while the western shoreline, with the exception of an area immediately north of the San Francisco-Oakland Bay Bridge, is a net erosional area.

Bay sediments surrounding NAVSTA TI are primarily alluvial deposits classified as Older Bay Mud Formation, Sand Deposits, and Younger Bay Mud Formation. The Older Bay Mud Formation is composed of firm clay with varying amounts of slit, sand, and gravel. The upper portion of the Older Bay Mud is mixed with sand layers. The Sand Deposits are generally localized units of fine sand that grade into a sandy silt and clayey sandy clay. The Sand Deposits may or may not be covered with Younger Bay Mud. Generally, the Younger Bay Mud Formation overlies the Older Bay Mud and Sand Deposits and consists of soft, plastic, silty clay, clayey silt with minor organic material, and clayey fine sand (COE 1979).

2.5.2 Sampling History

Site 13 collectively consists of nine offshore transfer parcels surrounding NAVSTA TI, with the exception of IR Site 27. Offshore samples at NAVSTA TI were collected from 1992 to 2002 to develop a detailed aquatic risk characterization that could be used as a basis for remedial decisions. The RIs focused on the ecological risk assessment (ERA) and the offshore habitat surrounding NAVSTA TI. The sampling strategy consisted of two major offshore RI phases. These phases were coupled with two smaller investigations, which focused on more specific offshore areas of concern as a result of the onshore activities at NAVSTA TI. Site 13 sampling locations are depicted in Figure 5.

In the Phase I RI, chemicals of potential ecological concern (COPEC) were identified using data collected during the 1992 storm water investigation (PRC Environmental Management, Inc. [PRC] 1993). A summary of the sediment and water screening values used to identify COPECs is provided in Tables 1 and 2, respectively. Data collected for the storm water investigation included:

- Storm water samples from select storm water outfalls. Sampling locations were identified based on a review of onshore RI sites investigated in the Onshore Phase I RI report (PRC 1993).
- Sediment samples from locations adjacent to the storm water outfalls.

- Sediment samples from offshore areas corresponding to the storm water outfalls and to specific onshore operations that could have resulted in accidental discharge of chemicals into the Bay.

Sediment and storm water data are summarized in Table 3. Based on the findings of the Phase I RI sampling effort, a Phase II sampling investigation was conducted in 1997 at Site 13. Phase II sample locations are shown on Figure 5.

The Phase II RI characterized the sources, extent, and potential toxicity of chemicals detected in the sediment offshore at NAVSTA TI. Under Phase II, sampling focused on tracking contaminants from onshore sources to offshore sediments through storm water outfalls. Phase II sampling locations were grouped into six areas, A through E and Area G; these areas were based on the Phase I analytical data and potential onshore sources (see Figure 5). The area immediately offshore from IR Site 28 was proposed as Area F; however, the area lacked collectable sediment because of the shallow bedrock. The Phase II sample locations were non-randomly located along transects extending offshore from storm water outfalls or potential onshore sources. Phase II RI offshore samples included chemical analysis of sediments and pore water, as well as invertebrate bioassays, and tissue residue analysis. Sediment and pore water data are summarized in Table 3. Invertebrate bioassay results and tissue residue data are summarized on Tables 4 and 5, respectively.

In 2001, additional offshore sediment samples were collected on the northeastern shoreline of IR Site 12, the Old Bunker Area, at NAVSTA TI (see Figure 5). The purpose of the Site 12 offshore area investigation was to address outstanding issues identified by the regulatory agencies and to finalize the Offshore Sediments OU RI. Samples were originally collected in response to the discovery of an onshore solid waste disposal area, located adjacent to the offshore area at Site 12. Offshore samples were analyzed for metals (x-ray fluorescence [XRF]) and PCBs. Sediment core samples were also collected for radioisotope analyses and used to geologically profile the sedimentary environment offshore of Site 12. Locations for XRF analysis were selected based on a sampling grid. The sampling grid covered 500 feet of shoreline adjacent to a land protrusion and extended 300 feet offshore. The results of the Site 12 offshore investigation showed chemical concentrations of metals and PCBs just slightly greater than the effects range-low (ER-L) sediment screening values (Table 1). However, there was concern sediment may have accreted in the area, effectively covering any Site 12 debris that may have moved offshore. No debris from the onshore area was observed in the sediment cores. Additionally, sediment chronologies based on radioisotope depth profiles collected at three locations showed an erosional nearshore environment, which supported the results of the sediment sampling and confirmed debris was not buried offshore. Based on these results, no additional offshore investigation was required. The results of this additional sampling event are summarized in Table 3. A more detailed discussion of the results can be found in the Site 12 Offshore Area Technical Memorandum (Tetra Tech 2001a) and the Final Offshore Sediments OU RI report (Tetra Tech 2001b).

At the request of Cal/EPA DTSC, the Navy evaluated the possibility that past Naval activities at IR Site 11, the YBI Landfill, deposited PCB-contaminated material offshore. Subsequently, during the fall of 2002, five intertidal sediment boreholes were sampled (see Figure 5). Samples were

analyzed for PCB and TPH-extractable contaminated material. Although ecologically based screening criteria for TPH in offshore sediments were not available, samples were compared with TPH action levels for terrestrial ecological receptors developed for the Naval Fuel Depot Point Molate Fuel Product Action Level Development Report (Tetra Tech 2000). Additionally, results for samples analyzed for TPH were also compared with NAVSTA TI residential screening criteria for hydrocarbons in soil. Results from this sampling event showed neither PCBs nor TPH-extractables were detected above the screening criteria, and no further action was recommended.

The Final RI report for Site 13 presents the results and an evaluation of offshore sampling data collected at NAVSTA TI during the Phase I, Phase II, and Site 12 offshore investigations (Tetra Tech 2001b). The objective and general strategy of the offshore investigations were to present a detailed ERA that could be used as a basis for remedial decisions.

2.6 CURRENT AND POTENTIAL FUTURE LAND AND RESOURCE USE

Site 13 consists of eight parcels, which are to be transferred or reassigned to three separate entities (Figures 2 and 3). The Submerged Land parcel (EDC S-1) and the Marina Parcel (S-2) are scheduled for transfer to TIDA and the City and County of San Francisco. Submerged Parcels S-3, S-4, S-5, and S-6 and the FHA Submerged Land Parcels S-8 and S-9 are reversionary and will be transferred back to the State of California. The Submerged Parcel (S-7) contiguous with the southern portion of YBI was previously reassigned to the USCG.

The two parcels planned for transfer to TIDA and the City and County of San Francisco will be subject to the Tidelands Trust that restricts uses to maritime-related activities. No specific change in the future use for the Submerged Land Parcel (EDC S-1) has been identified other than continued use of an existing fishing pier. Two future uses have been identified for the Marina Parcel (S-2) in the City's application for the property and preliminary development plans. This parcel currently has an existing 108-slip marina and contains Pier 1, which was formerly used for docking naval vessels. Future plans include expanding this marina to 403 slips and converting Pier 1 to a ferry terminal for future water transit, to and from TI (Economic & Planning Systems 2000).

The two reversionary parcels planned for transfer to the State of California also will be subject to the Tidelands Trust. No future land uses are identified for the reassigned Submerged Parcel (S-7) to the USCG; however, a temporary construction easement was granted to CALTRANS to facilitate activities associated with construction of the new east span of the San Francisco-Oakland Bay Bridge.

2.7 SUMMARY OF SITE RISKS

The following sections provide a summary of the human health and ecological risks for Site 13.

2.7.1 Human Health Risks

The Offshore Sediments OU RI report concluded that there are no complete exposure pathways for humans from exposure to submerged sediments, as contact with the sediments would be minimal to none (Tetra Tech 2001b). An occasional or incidental contact would not provide a complete exposure pathway for humans. Since there are no complete exposure pathways, a human health risk assessment was not conducted.

2.7.2 Ecological Risks

The ERA for Site 13 was conducted as part of the RI to evaluate potential threats to the offshore environment and risk to ecological receptors from site-related chemicals. The ERA incorporated the basic framework for ERAs outlined by the EPA's guidance (EPA 1989, 1992, and 1998). ERA methodology is based on establishing a conceptual site model (CSM) that identifies natural resources potentially at risk, fate and transport processes, and complete exposure pathways for receptors. The CSM for Site 13 is depicted in Figure 6.

The components of the ERA included: problem formulation, assessment of exposure and effects, and risk characterization. The first step, problem formulation, involved identifying key factors to be considered in the ERA and compiling available information and data about the site. In the second step, assessment of exposure and effects, the biological receptors likely to encounter the chemical stressors were identified. The likely exposure routes (for example, dermal contact or ingestion), as well as the spatial and temporal variation in exposure were identified. The potential adverse effects of exposure to chemical stressors on ecological receptors were then evaluated. In the final step, risk characterization, information gained during the exposure and effects assessment was integrated to evaluate the relationship between environmental stressors and adverse ecological effects. This integration relied primarily on weight of evidence arguments developed on the basis of various types of available information. A summary of each of the components of the ERA for Site 13 is provided in the following sections.

2.7.2.1 Problem Formulation

COPECs were identified for Site 13 (areas A, B, C, D, E, and G, and storm drains within Site 13 [Figure 5]) based on: (1) chemicals detected at concentrations that exceeded local or ambient conditions, and (2) chemicals that may cause toxicity. For sediment, a chemical was identified as a COPEC if the detected concentration exceeded the Bay ambient concentration (Water Board 1998b) and the ER-L value (Long and others 1995). Where Bay ambient values were not available, maximum detected concentrations at the project-specific reference site (Paradise Cove) were used instead. Paradise Cove was chosen as the reference site in consultation with the Water Board and was based the Water Board's evaluation and use of sediment reference sites in San Francisco Bay (Water Board 1998c). Pore water and surface water data were compared with marine ambient water quality criteria (Water Board 1998a). A summary of the sediment and water screening values used to identify COPECs is provided in Tables 1 and 2, respectively. Based on comparisons with screening values, metals, pesticides, PAH, PCBs, and TPH were identified as COPECs in sediment and water. Table 3 provides the range of detected concentrations and the

frequency of detection for each COPEC in each medium investigated. Mean and 95 percent upper confidence limit concentrations are also shown on Table 3. Table 6 lists the COPECs in each medium investigated by area. More detailed information on the screening process and COPEC identification is included in the Final Offshore Sediments OU RI report (Tetra Tech 2001b).

2.7.2.2 *Exposure and Effects Assessment*

Site 13 represents the marine habitat surrounding NAVSTA TI and is mainly subtidal, with hard-bottom and soft-bottom mud substrates. A limited intertidal habitat composed of riprap, docks, and pier pilings is present along the perimeter of TI. A sandy beach and mudflat intertidal shoreline is present at the base of Clipper Cove and at a portion of the southeastern and southwestern shores of YBI. Most of the YBI shoreline on the southern and western portions of the island is composed of rocky intertidal habitat. There are no freshwater or wetland habitats on NAVSTA TI.

Receptors residing in or migrating through the offshore habitat at Site 13 may be exposed to site-related chemicals in surface waters, sediments and soil, groundwater, or plant and animal material. The exposure assessment estimated the potential amount of exposure for a receptor to each COPEC. The primary routes of exposure evaluated in the RI included direct contact with sediment by aquatic invertebrates and ingestion by avian wildlife of sediment and food that may contain accumulated chemicals from sediment. Figure 6 shows potential sources, mechanisms, pathways, and exposure routes of chemical movement through the system. Figure 7 shows potential exposure and flow of chemicals through the food web.

Assessment and measurement endpoints were used to evaluate the in-place chemical stressors. Assessment endpoints represented environmental characteristics or values which, if found to be significantly affected, would indicate a need for action by risk managers at Site 13. Conversely, the measurement endpoints represented a quantitative method of analysis and characterization. The assessment endpoints used in the RI for Site 13 included protection of populations of benthic invertebrates; protection of populations of shore birds; protection of populations of piscivorous birds; and protection of individual species with threatened or endangered status. The willet (*Catoptrophorus semipalmatus*) and double-crested cormorant (*Phalacrocorax auritus*) were selected as representative receptors based on feeding strategy and occurrence in the vicinity of NAVSTA TI. The peregrine falcon (*Falco peregrinus)* was selected because it represents a California threatened and endangered species known to frequent the site. Measurement endpoints included concentrations in tissue, concentrations in sediment, and results from the sediment toxicity test. The exposure pathways for Site 13, including measurement and assessment endpoints, are listed on Table 7.

Exposure for aquatic invertebrates was estimated using toxicity benchmarks and direct toxicity testing. Exposure was estimated using food chain models for avian receptors that ingest sediment and food items that may contain accumulated chemicals from sediment. Site-specific doses were calculated based on measured concentrations in sediment and prey tissue. Site-specific doses were compared with toxicity reference values (TRV). TRVs are screening-level benchmarks for higher trophic level receptors. High and low TRVs were derived

for chemicals of concern and representative receptors specific to Navy installations by a work group that involved the Navy and its contractors and the EPA Region 9 Biological Technical Advisory Group (Engineering Field Activity West 1998). A low TRV is a conservative value consistent with a chronic no-effect level. A high TRV is associated with a low to medium range of observed effects and is therefore less conservative than a low TRV. More detailed information on the exposure and effects assessment is provided in the Final Offshore Sediments OU RI report (Tetra Tech 2001b).

2.7.2.3 Risk Characterization

A weight-of-evidence approach was used to identify receptors at risk from site chemicals. Information and data used in the weight-of-evidence approach included analytical results, toxicity tests, factors that affect bioavailability, food-chain analysis, and literature reviews. A summary of the methodology for characterizing ecological risk at Site 13 is summarized in Table 8 and a brief description is summarized below.

The exposure estimates and toxicity benchmarks were used to estimate the potential for adverse effects to the ecological receptors at the site. Sediment and pore water chemistry were compared with benchmark values using a hazard quotient (HQ) approach to identify which locations at each of the areas at Site 13 pose the potential for toxic effects to benthic invertebrate receptors. An HQ was calculated for each chemical and each environmental medium where a screening benchmark was available. The sum of HQs for each chemical yielded a hazard index (HI), providing a relative measure of the level of risk from inorganic and organic chemicals detected at each sample location. Table 9 presents the HIs that exceeded 1 for benthic invertebrate receptors based on the effects range-medium (ER-M) sediment screening values. The ER-M is the concentration measured at the 50th percentile or median of the effects data for each chemical. Concentrations above the ER-M are frequently associated with adverse effects (Long and others 1995). Survival results of the sediment bioassay toxicity tests for benthic invertebrate receptors are shown on Table 4. In addition to the HI evaluations and bioassay toxicity tests, the benthic invertebrate receptor risk characterization also included an evaluation of the physical characteristics of the sediment affecting bioavailability and a review of peer reviewed literature in a weight-of-evidence evaluation, as shown on Table 8. This weight-of-evidence evaluation conclude the risk to benthic invertebrate receptors from exposure to sediments at Site 13 was considered acceptable.

The risk for avian receptors was expressed as an HQ. The HQ is a ratio of an exposure estimate to a toxicity reference value or benchmark. The estimated dose (exposure) is divided by the TRV to yield a HQ. An HQ less than or equal to a value of 1 indicates that adverse impacts to ecological receptors are considered unlikely. An HQ greater than 1 indicates that further assessment may be necessary to evaluate the potential for adverse impacts. At NAVSTA TI, a range of HQs were calculated to represent "very conservative" to "less conservative" estimates of risk for each avian receptor.

A HQ_1 that exceeds 1.0 indicates unacceptable risk. The HQ_1 was based on a low dose and a high TRV (based on the lowest observed adverse effect level [LOAEL]). This scenario represented an exposure dose calculated for a high body weight receptor ingesting a minimal amount of food compared to a LOAEL and is considered less conservative. No HQ_1s exceeded 1 at NAVSTA TI.

A HQ_2 that exceeds 1.0 indicates that further evaluation of the potential for risk is necessary. The HQ_2 was based on a high dose and the low TRV (based on a no observed adverse effects level [NOAEL]). This scenario represented an exposure dose calculated for a low body weight receptor ingesting a lot of food compared with a NOAEL and is considered very conservative. The HQ_2 exceeded 1 for several chemicals at NAVSTA TI.

HQ_3s were calculated to evaluate the potential for risk where HQ_2s exceeded 1. This scenario represented an exposure dose calculated for a low body weight receptor ingesting a lot of food compared with a LOAEL and is considered a more realistic exposure scenario.

A HQ_3 that exceeded 1 was an indication of potential risk, but one that still required consideration of the uncertainty associated with the exposure dose model. Sources of uncertainty in the exposure dose estimates include population and individual variation in life history and variation in dietary patterns of animals at the site. In addition, the use of simple scaling equations to estimate receptor-specific ingestion rates may not accurately represent actual ingestion rates. Based on an evaluation of the uncertainties associated with the exposure dose model, risk was considered acceptable where HQ_3s were less than 5.

Although there were HQ_2s that exceeded 1 at NAVSTA TI, no HQ_1s exceeded 1 and no HQ_3s exceeded 5. Therefore, risk to avian receptors at NAVSTA TI was considered acceptable. A detailed summary of the data used in the risk characterization for each of the areas at Site 13 is presented in Table 10. The Site 13 areas evaluated are depicted in Figure 5.

The conclusions of the risk characterization for each of the areas evaluated at Site 13 are summarized below.

- Area A – Risk to benthic invertebrate receptors from exposure to sediments was considered acceptable. There is no direct exposure pathway for avian receptors to sediments at Area A. No further investigation or remedial action is necessary for Area A.

- Area B – Selenium at two locations, although at a concentration equal to the ER-M, was only slightly elevated above the TI ambient soil level, but below the YBI background soil level. In pore water, HQs for mercury were elevated; however, mercury was not detected at elevated levels in sediment. Risk to benthic invertebrate receptors from exposure to sediments was considered acceptable. There is no direct exposure pathway for avian receptors to sediments at Area B. No further investigation or remedial action is necessary for Area B.

- Area C – Concentrations of selenium at four locations exceed the ER-M in sediment; however, concentrations were not substantially greater than background soils at YBI. Risk to benthic invertebrate receptors from exposure sediments was considered acceptable. The results of the food-chain model indicated a limited amount of incremental risk to avian receptors from exposure to sediments or prey in area C; however, this risk was considered within acceptable limits based on the uncertainty associated with the dose model. No further investigation or remedial action is necessary for Area C.

- Area D – Based on the evaluation of the chemical and toxicity data, a limited amount of risk to benthic invertebrate receptors from exposure to mercury in sediment was indicated at one location; however, this risk was considered acceptable. The results of the food chain model indicated a limited amount of incremental risk to avian receptors from exposure to sediments or prey in Area D; however, this risk was considered within acceptable limits based on the uncertainty associated with the dose model. No further investigation or remedial action is necessary for Area D.

- Area E – Based on the evaluation of the chemical and toxicity data, a limited amount of risk to benthic invertebrate receptors from exposure to mercury and selenium in sediment was indicated at three locations; however, this risk was considered acceptable. The results of the food chain model also indicated a limited amount of risk to avian receptors from exposure to mercury and lead in sediments at Area E; however, this risk was considered within acceptable limits based on the uncertainty associated with the dose model. No further investigation or remedial action is necessary for Area E.

- Area G – Risk to benthic invertebrate receptors from exposure to sediments in Area G was considered acceptable. There is no direct exposure pathway for avian receptors to sediments at Area G. No further investigation or remedial action is necessary for Area G.

- 2001 Site 12 Offshore Area – Although data indicated that metals and PCBs were present in the offshore area, concentrations were not elevated above the ER-M sediment screening values. Onshore debris from the solid waste disposal area was not found buried in the offshore sediments. No further investigation or remedial action is necessary for the area directly northeast of onshore Site 12.

- 2002 Site 11 Intertidal Investigation – Results from this sampling event indicated PCBs were at concentrations below the ER-M sediment screening value. Additionally, concentrations of TPH-extractables were both below TPH action levels and below the TI residential screening criterion for soil. No further investigation or remedial action is necessary for the intertidal area at Site 11.

Based on the information and data evaluated as part of the RI for Site 13, the offshore sediments do not pose an unacceptable risk to human health or the environment. Therefore, no remedial action was deemed necessary for Site 13. More detailed information on the problem formulation, exposure and effects assessment, and risk characterization is provided in the Final Offshore Sediments OU RI report (Tetra Tech 2001b).

2.8 DOCUMENTATION OF SIGNIFICANT CHANGES

The PP for Site 13, Offshore Sediments, was released for public comment on April 1, 2004. The PP identified no action as the proposed decision for Site 13. The public comment period ran from April 1, 2004, through April 30, 2004. One comment was received during the public meeting and one was received by U.S. mail during the public comment period. The Navy and the State of California have reviewed all comments submitted during the public comment period. It was determined that no significant changes to the no action decision, as originally identified in the PP, were necessary or appropriate.

3.0 RESPONSIVENESS SUMMARY

This section presents the Navy's responses to comments on the PP for Site 13, Offshore Sediments, NAVSTA TI.

3.1 OVERVIEW AND BACKGROUND ON COMMUNITY INVOLVEMENT

The PP for IR Site 13 was made available to the public on April 1, 2004, thereby initiating the 30-day public comment period. The public meeting for the PP for Site 13 was held on April 20, 2004, in the Casa de la Vista, Building 271, at Treasure Island, California. The public comment period ran from April 1, 2004 through April 30, 2004. A Copy of the newspaper notice that announced the public comment period and the location and time of the public meeting is included in Appendix C.

The PP presented a No Action Decision for the Offshore Sediments at Site 13 (Tetra Tech 2004). Federal and state regulatory agencies concur with the No Action PP. The purpose of the PP and the public meeting was to provide the public with a concise summary of the site investigation and information used to support the Navy's preferred alternative. A transcript of the public meeting and an attendance roster are also included in Appendix C.

3.2 STAKEHOLDER ISSUES AND NAVY RESPONSES

In preparing this responsiveness summary, the Navy followed "A Guide to Preparing Superfund Proposal Plans, Records of Decisions, and Other Remedy Selection Documents" (OSWER Directive 9200.1-23P, July 1999.) The responsiveness summary summarizes the views of the public and support agencies and documents in the record how public comments were integrated into the remedial decision. The guidance suggests that the responsiveness summary be organized into two sections:

"Stakeholder Issues and Lead Agency Responses: Summarize and respond concisely to major issues raised by stakeholders (for example, community groups, support agencies, businesses, municipalities, and potentially responsible parties [PRP]).

"Technical and Legal Issues, if necessary," (EPA 1999)

Based on the comments received from citizens and support agencies during the public comment period, there are no outstanding technical or legal issues for this ROD. Therefore, only the Stakeholder Issues and Lead Agency Responses section is included in this responsiveness summary. The guidance recommends "If the lead agency determines that a point-by-point response to a set of comments is warranted, a separate comment/response document should be prepared." The Navy has concluded that a separate point-by-point response document is not warranted and has responded in this responsiveness summary to all comments submitted.

Verbal comments were received from one person during the public meeting on the PP for Site 13. A copy of the transcript for the public meeting is provided in Appendix C. Written comments were received from one community group by U.S. mail during the public comment period. The comments received during the public comment period were requests for clarification and additional information to support the conclusions of the RI with respect to: (1) the risk to human health from fishing and water sports, and (2) the ERA methodology. The Navy and Cal/EPA DTSC believe the comments have been addressed and there is sufficient technical basis to proceed with the no action decision for Site 13. Comments and the Navy's responses are included in Appendix D.

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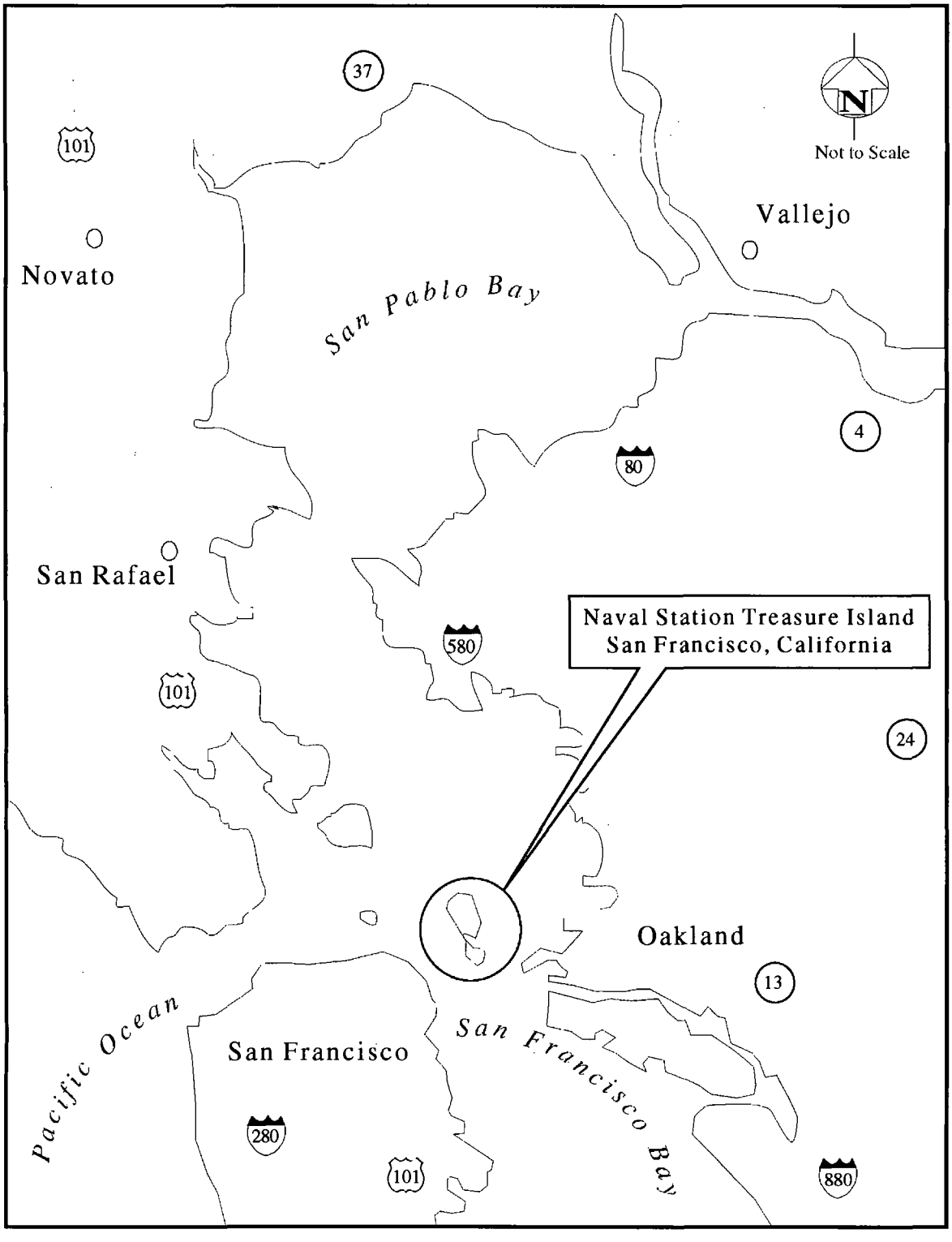
FIGURES



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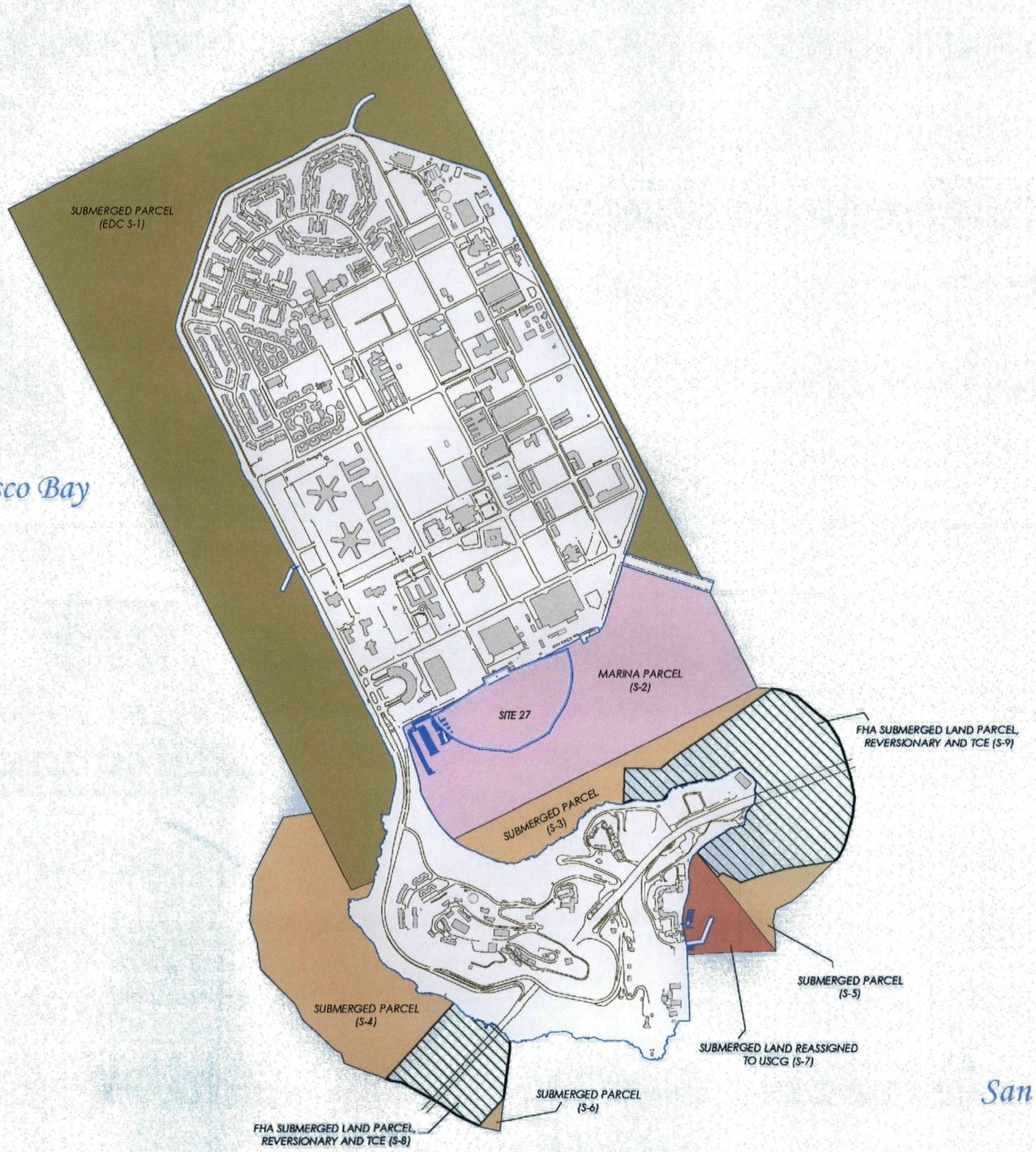
Naval Station Treasure Island, California
U.S. Department of the Navy, BRAC PMO West, San Diego, CA

FIGURE 1
NAVSTA TI LOCATION MAP

Site 13 Record of Decision NAVSTA Treasure Island



AREA OF INTEREST

Legend

- Site 27

Included in Site 13 ROD:

- Submerged Parcel (EDC S-1)
- Marina Parcel (S-2)
- Submerged Parcel (S-3, S-4, S-5, and S-6)
- FHA Submerged Land Parcel (reversionary & TCE) (S-8 and S-9)
- Submerged Land Reassigned to USCG (S-7)
- Buildings
- Roads

Notes:
EDC = Economic Development Conveyance
FHA = Federal Highway Administration
TCE = Temporary Construction Easment
USCG = U.S. Coast Guard
S-# = Transfer Parcel Number
Depicted Parcels = Site 13 Boundary

N

1,200 0 1,200

Feet

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NAVAL STATION TREASURE ISLAND, CALIFORNIA
U.S. DEPARTMENT OF THE NAVY, BRAC PMO WEST, SAN DIEGO, CA

FIGURE 2
DEVELOPMENT PARCELS
AT SITE 13, NAVSTA TI

Site 13 Record of Decision
NAVSTA Treasure Island

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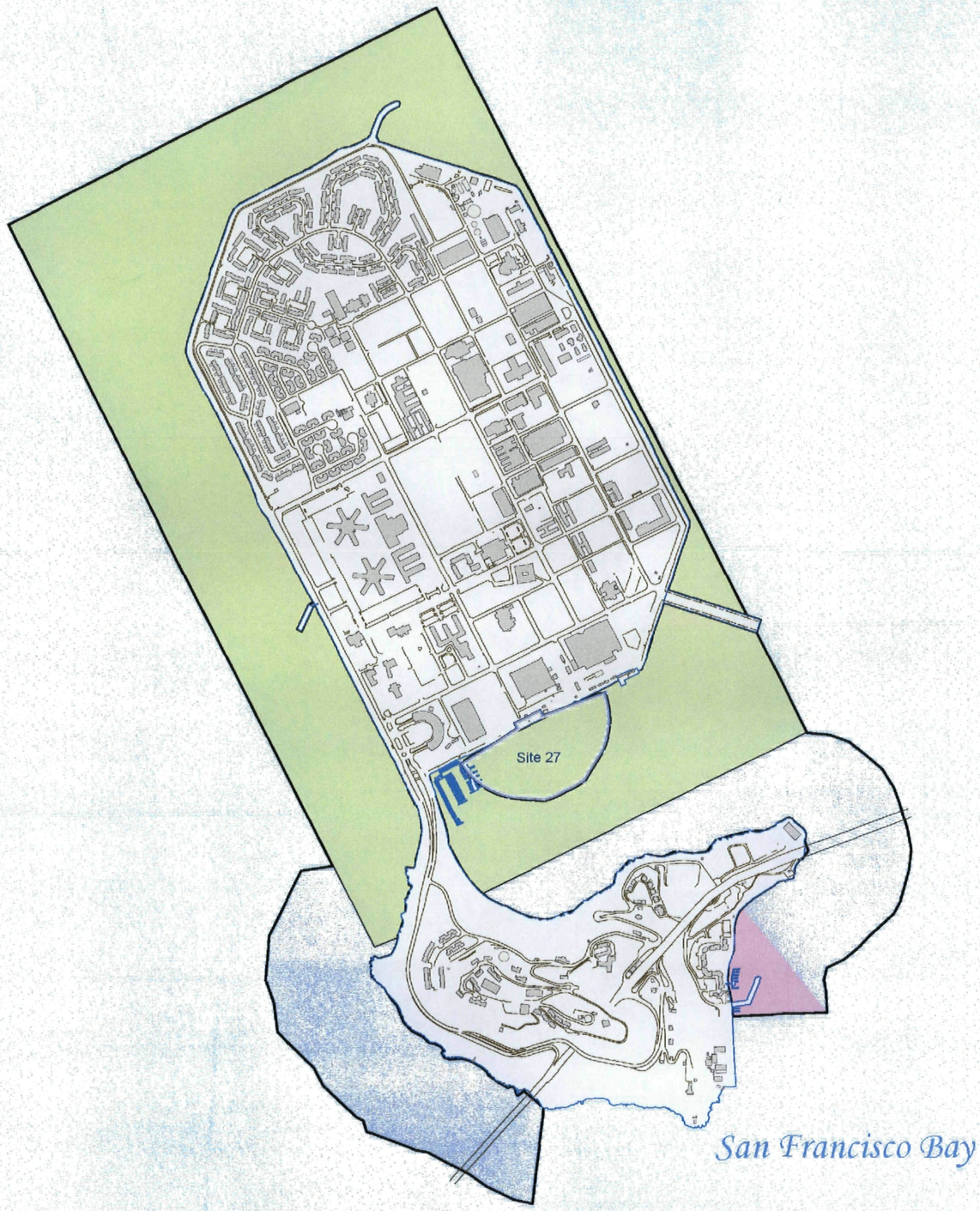

AREA OF INTEREST

Legend

- Site 27 Boundary

Transfer Parcels:

- City of San Francisco (proposed)
- California (reversionary)
- Reassigned to USCG
- Roads
- Buildings

Note: USCG = U.S. Coast Guard
Depicted Transfer Parcels = Site 13 Boundary

1,200 0 1,200
Feet

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NAVAL STATION TREASURE ISLAND, CALIFORNIA
U.S. DEPARTMENT OF THE NAVY, BRAC PMO WEST, SAN DIEGO, CA

FIGURE 3
TRANSFER PARCELS AT SITE 13, NAVSTA TI

Site 13 Record of Decision
NAVSTA Treasure Island

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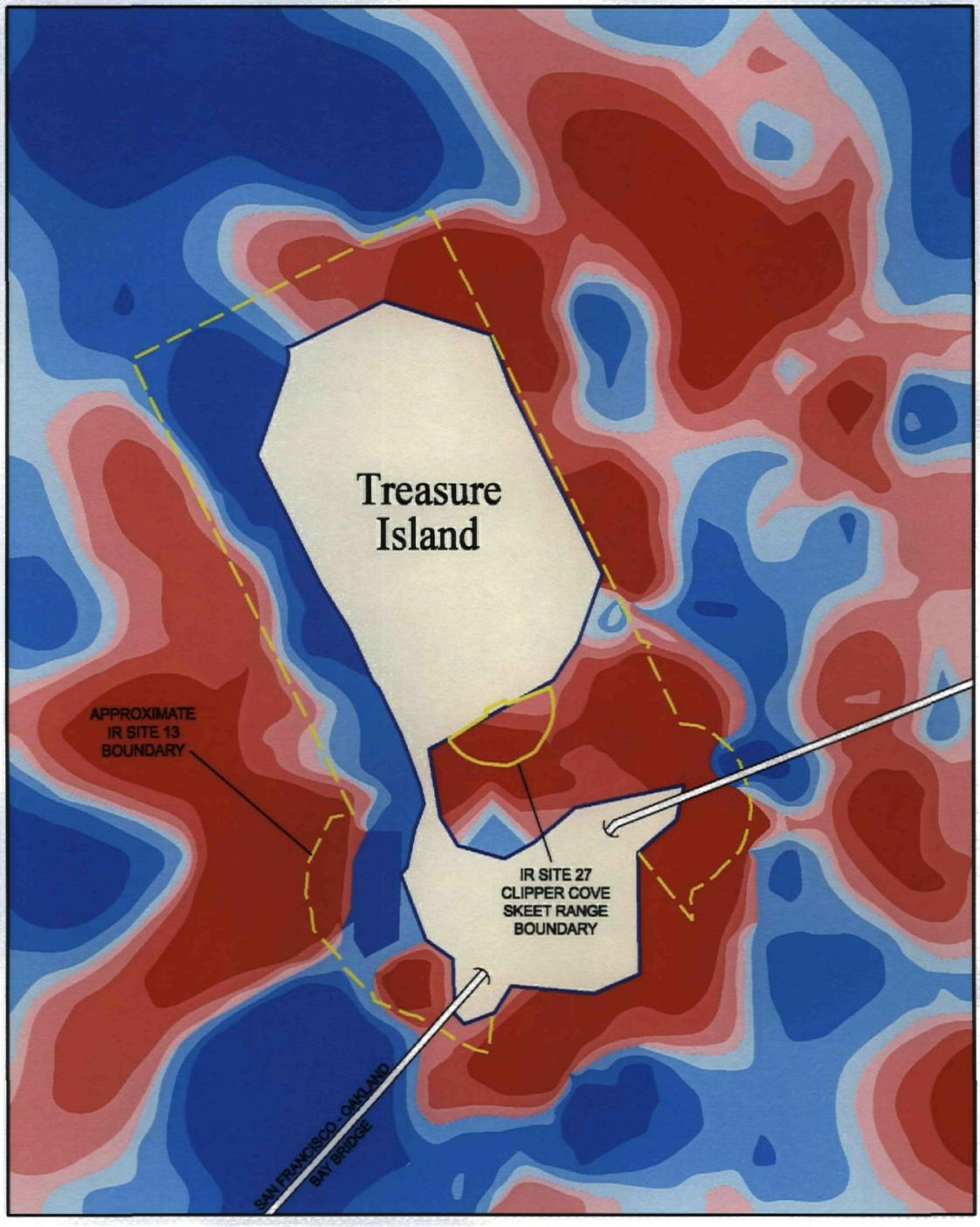

APPROXIMATE SCALE: 1 INCH = 2,200FEET

EROSION ACCRETION

< -6' | -3' to -6' | -1' to -3' | 0' to -1' | 0' to 1' | 1' to 3' | 3' to 6' | >6'

Source of data: EPA/COE/BCDC/RWQCB/SWRCB. 1996.
"Long Term Management Strategy for Placement of Dredge Material in SF Bay"

Note: Site location added to figure by Tetra Tech EM Inc.

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Naval Station Treasure Island

U.S. Department of the Navy, BRAC PMO West, San Diego, CA

FIGURE 4
NET BATHYMETRIC CHANGES FROM 1955 TO 1990

Site 13 Record of Decision at
NAVSTA Treasure Island

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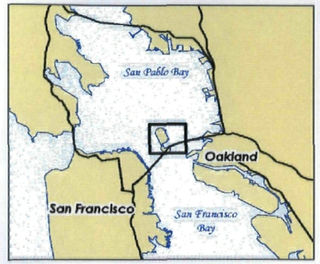
AREA OF INTEREST



Legend:

- Phase I Sampling Locations (Sediment)
- 1997 Phase II Sampling Locations (Porewater and Sediment)
  - Area A
  - Area B
  - Area C
  - Area D
  - Area E
  - Area F (Sample not Collected; Encountered Bedrock)
  - Area G
- 2 Clam Tissue Samples
- 1 Crab and 1 Fish Tissue Samples
- 2 Crab and 1 Polychaete Tissue Samples
- 2001 Site 12 Offshore Area Sampling Locations (Sediment)
- 2002 Site 11 Intertidal Investigation (Sediment)
- 1992 Storm Water Outfall Sample (Stormwater or Sediment)
- Offshore Investigation Sites
- Onshore Investigation Sites
- Building
- Road

N

500 0 500 1,000
Feet

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NAVAL STATION TREASURE ISLAND, CALIFORNIA
U.S. DEPARTMENT OF THE NAVY, BRAC PMO WEST, SAN DIEGO, CA

FIGURE 5
OFFSHORE SAMPLE LOCATIONS AT SITE 13, NAVSTA TI

Site 13 Record of Decision
NAVSTA Treasure Island

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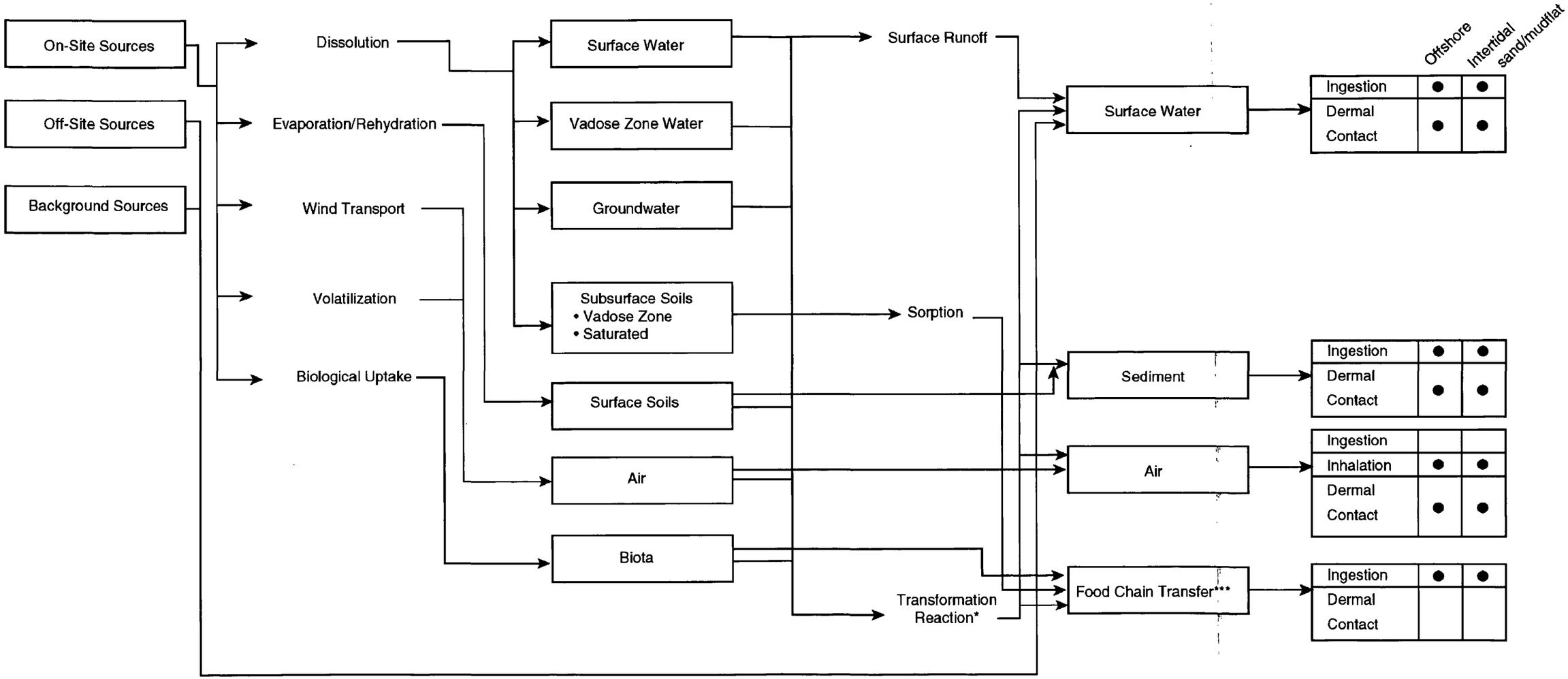
PRIMARY SOURCES (Original Source to Site)	PRIMARY RELEASE MECHANISM (Initial Release)	SECONDARY SOURCES (Receiving Media)	SECONDARY RELEASE MECHANISM	EXPOSURE PATHWAY** (Receptor Contact)	EXPOSURE ROUTE (Biota)



LEGEND

* Transformation reactions may also occur as a primary release mechanism

** Additional interaction may occur between each of these pathways that may not be shown

*** Includes detritivores and consumers

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NAVAL STATION TREASURE ISLAND, CALIFORNIA
U.S. DEPARTMENT OF THE NAVY, BRAC PMO WEST, SAN DIEGO, CA

FIGURE 6
POTENTIAL EXPOSURE ROUTES AND RECEPTORS TREASURE ISLAND OFFSHORE
Site 13 Record of Decision
NAVSTA Treasure Island

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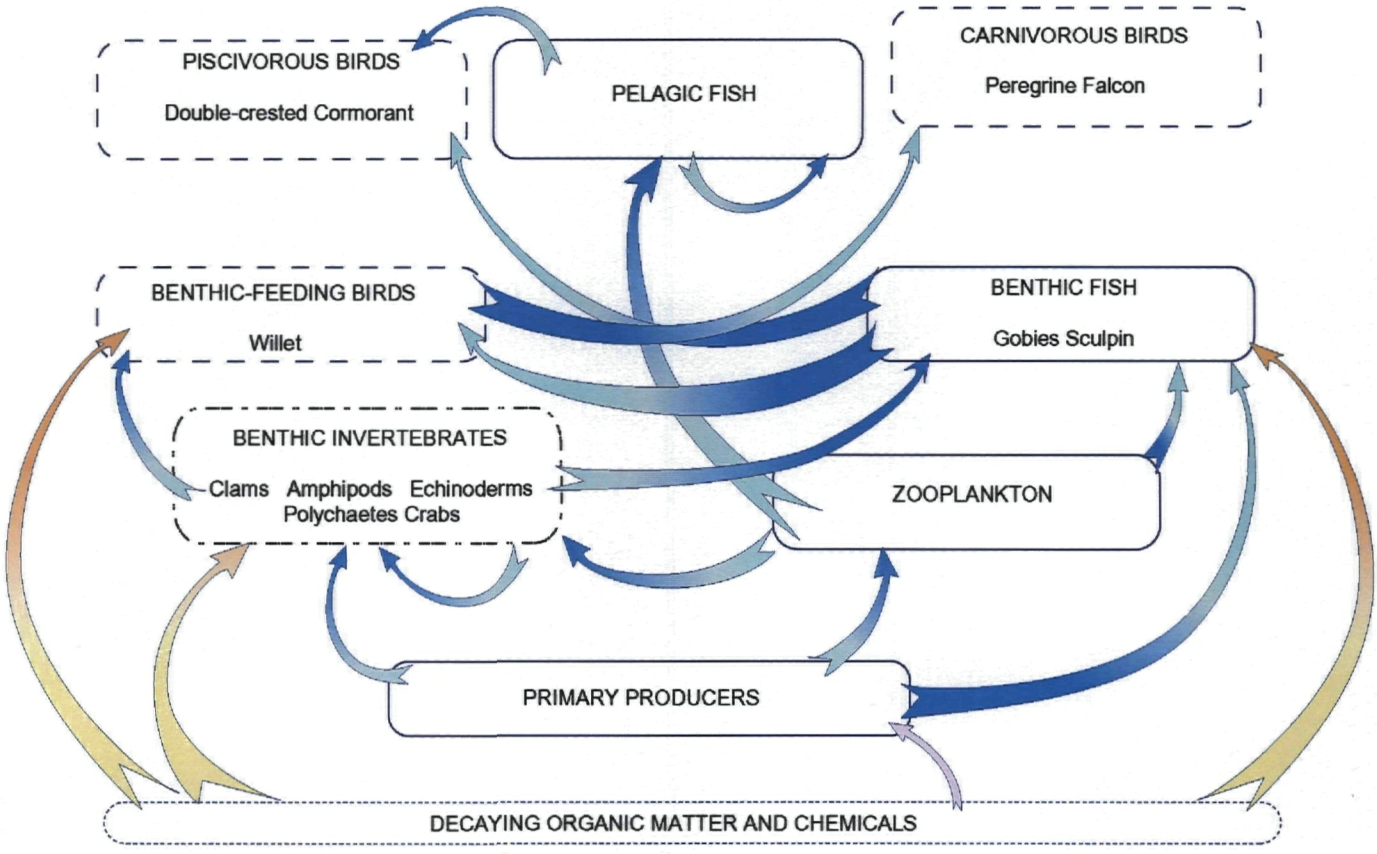

LEGEND

- Not Assessed
- Measurement Endpoint
- Assessment Endpoint
- Assessment and Measurement Endpoint
- Ingestion
- Ingestion and Dermal
- Nutrient Uptake

NOTE:
Species under each guild heading vary in actual diet composition

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Naval Station Treasure Island, California
U.S. Department of the Navy, BRAC PMO West, San Diego, CA

FIGURE 7
CHEMICAL EXPOSURE AND FLOW DIAGRAM FOR ASSESSMENT AND MEASUREMENT ENDPOINTS TREASURE ISLAND OFFSHORE
Site 13 Record of Decision, NAVSTA Treaure Island

TABLES

TABLE 1: OFFSHORE SEDIMENT SCREENING VALUES
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Water Board (1998) [a] SF Bay Ambient	Reference Site Maximum Paradise Cove	Long & others (1995) [b] ER-L	ER-M
Inorganics (mg/kg dry weight)				
Antimony		2.7	2 *	25 *
Arsenic	15.3	11.4	8.2	70
Cadmium	0.33	0.12	1.2	9.6
Chromium	112	85.7	81	370
Copper	68.1	49.2	34	270
Lead	43.2	25.8	46.7	218
Mercury	0.43	0.58	0.15	0.71
Nickel	112	96.9	20.9	51.6
Selenium	0.64	ND	0.7 *	1.4 *
Silver	0.58	ND	1	3.7
Zinc	158	120	150	410
Organic Compounds (µg/kg dry weight)				
Total PAHs	3,390	1264	4,022	44,792
Low Molecular Weight PAHs				
Acenaphthene	26.6	ND	16	500
Acenaphthylene	31.7	ND	44	640
Anthracene	88	ND	85.3	1,100
Fluorene	25.3	ND	19	540
Naphthalene	55.8	ND	160	2,100
Phenanthrene	237	79	240	1,500
Sum LMW PAHs	434	135	552	3,160
High Molecular Weight PAHs				
Benzo(a)anthracene	244	93	261	1,600
Benzo(a)pyrene	412	140	430	1,600
Chrysene	289	120	384	2,800
Dibenzo(a,h)anthracene	32.7	ND	63.4	260
Fluoranthene	514	170	600	5,100
Pyrene	665	180	665	2,600
Sum HMW PAHs	3,060	1,129	1,700	9,600
2-Methylnaphthalene	19.4	ND	70	670

TABLE 1: OFFSHORE SEDIMENT SCREENING VALUES (CONTINUED)

Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Water Board (1998) [a] SF Bay Ambient	Reference Site Maximum Paradise Cove	Long & others (1995) [b] ER-L	ER-M
PCBs/Pesticides (µg/kg dry weight)				
Total PCBs	14.8	ND	22.7	180
4,4'-DDD	NA	4.1	2.0*	20*
4,4'-DDE	NA	ND	2.2	27
4,4'-DDT	NA	ND	1*	7*
Total DDTs	7.0	7.7	1.58	46.1
Dieldrin	0.44	ND	0.02*	8.0*
Endrin	NA	ND	0.02*	45.0*
Organotins (µg/kg dry weight)				
Tetrabutyltin	NA	ND	25.1**	NA
Tributyltin	NA	ND	25.1**	NA

Notes:

a Water Board. 1998. "Ambient Concentrations of Toxic Chemicals in San Francisco Bay Sediments." April.

b Long, E.R., D. D. MacDonald, S.L. Smith, F.D. Calder. 1995. "Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments." *Environmental Management.* Volume 19. Number 1. Pages 81-97.

* National Oceanic and Atmospheric Administration (NOAA). 1991. "The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program." NOAA, Office of Oceanography and Marine Assessment, Seattle, WA. Technical Memorandum NOS OMA 52. (Also cited as Long and Morgan, 1990.)

** EPA. 1996. "Recommendations for Screening Values for Tributyltin in Sediments at Superfund Sites in Puget Sound, Washington." Prepared by Roy F. Weston, Inc. for EPA, Region 10. EPA 910-R-96-014. October.

Sample locations can be found in Figure 5.

µg/kg	Micrograms per kilogram	LMW	Low molecular weight
DDD	Dichlorodiphenyldichloroethane	mg/kg	milligrams per kilogram
DDE	Dichlorodiphenyldichloroethylene	NA	Not available
DDT	Dichlorodiphenyltrichloroethane	ND	Not Detected
EPA	U.S. Environmental Protection Agency	PAH	Polycyclic aromatic hydrocarbon
ER-L	Effects range-low	PCB	Polychlorinated biphenyl
ER-M	Effects range-median	Water Board	Regional Water Quality Control Board
HMW	High molecular weight		

TABLE 2: OFFSHORE SEDIMENTS AMBIENT WATER QUALITY CRITERIA
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Chronic Criteria (µg/L)		Acute Criteria (µg/L)	
	AWQC[a] National Toxics Rule[b]	California Toxics Rule[c]	AWQC[a] National Toxics Rule[b]	California Toxics Rule[c]
Inorganics				
Antimony	**500**	--	**1,500**	--
Arsenic	**36**	36	**69**	69
Cadmium	**9.3**	9.3	**42**	42
Chromium (III)	--	--	10,300	--
Chromium (VI)	**50**	50	**1,100**	1100
Copper	**2.4**	3.1	**2.4**	4.8
Lead	**8.1**	8.1	**210**	210
Mercury	**0.025**	0.94	**1.8**	1.8
Nickel	**8.2**	8.2	**74**	74
Phosphorus	--	--	**0.1**	--
Selenium	**71**	71	**290**	290
Silver	**0.92**		**1.9**	1.9
Thallium	--	--	2,130	--
Zinc	**81**	81	**90**	90
Pesticides				
4,4'-DDD	--	--	3.6	--
4,4'-DDE	--	--	14	--
4,4'-DDT	**0.001**	0.001	**0.13**	0.13
Aldrin	--	--	**1.3**	1.3
Chlordane	**0.004**	0.004	**0.09**	0.09
Dieldrin	**0.0019**	0.0019	**0.71**	0.71
Endosulfan sulfate	0.0087	--	--	--
Endosulfan-alpha	**0.0087**	0.0087	**0.034**	0.034
Endosulfan-beta	**0.0087**	0.0087	**0.034**	0.034
Endrin	**0.0023**	0.0023	**0.037**	0.037
gamma-BHC (Lindane)	--	--	**0.16**	0.16
Heptachlor	**0.0036**	0.0036	**0.053**	0.053
Heptachlor epoxide	**0.0036**	0.0036	**0.053**	0.053
Malathion	--	--	**0.1**	--
technical-BHC	--	--	0.34	--
PCBs				
PCB-1016	**0.03**	0.03	10	--
PCB-1221	**0.03**	0.03	10	--
PCB-1232	**0.03**	0.03	10	--
PCB-1242	**0.03**	0.03	10	--
PCB-1248	**0.03**	0.03	10	--
PCB-1254	**0.03**	0.03	10	--
PCB-1260	**0.03**	0.03	10	--

TABLE 2: OFFSHORE SEDIMENTS AMBIENT WATER QUALITY CRITERIA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Chronic Criteria (µg/L)		Acute Criteria (µg/L)	
	AWQC[a] National Toxics Rule[b]	California Toxics Rule[c]	AWQC[a] National Toxics Rule[b]	California Toxics Rule[c]
PAHs				
2-Methylnaphthalene	--	--	300	--
Acenaphthene	710	--	970	--
Acenaphthylene	--	--	300	--
Anthracene	--	--	300	--
Benzo(a)anthracene	--	--	300	--
Benzo(a)pyrene	--	--	300	--
Benzo(b)fluoranthene	--	--	300	--
Benzo(g,h,1)perylene	--	--	300	--
Benzo(j)fluoranthene	--	--	300	--
Benzo(k)fluoranthene	--	--	300	--
Chrysene	--	--	300	--
Dibenz(a,h)anthracene	--	--	300	--
Dibenzo(a,e)pyrene	--	--	300	--
Dibenzo(a,h)pyrene	--	--	300	--
Dibenzo(a,i)pyrene	--	--	300	--
Dibenzo(a,l)pyrene	--	--	300	--
Diethyl phthalate	3.4	--	2,944	--
Fluoranthene	16	--	40	--
Fluorene	--	--	300	--
Indeno(1,2,3-c,d)pyrene	--	--	300	--
Indeno(1,2,3-c,d)pyrene	--	--	300	--
Isophorone	--	--	12,900	--
Naphthalene	--	--	2,350	--
Naphthalenes, chlorinated	--	--	7.5	--
Phenanthrene	**4.6**	--	**7.7**	--
Pyrene	--	--	300	--
Tributyltin	**0.01**	--	**0.01**	--

Notes:

a EPA. 1997. "Water quality standards; Establishment of numeric criteria for priority toxic pollutants for the State of California; Proposed rule." Federal Register Volume 62. Pages 42160-42208.
Water Board, Central Valley Region. 1998. "A Compilation of Water Quality Goals." Sacramento, California. March.

b 40 CFR Section 131.36.

c EPA. 2000. "Water Quality Standards. Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California."

Sample locations are presented in Figure 5.

Bolded values are used as water screening values in ecological risk assessment.

µg/L	micrograms per liter	DDE	Dichlorodiphenyldichloroethylene
--	Not available	DDT	Dichlorodiphenyltrichloroethane
AWQC	Ambient water quality criteria	EPA	U.S. Environmental Protection Agency
BHC	Hexachlorocyclohexane	PAH	Polycyclic aromatic hydrocarbon
CFR	*Code of Federal Regulations*	PCB	Polychlorinated biphenyl
DDD	Dichlorodiphenyldichloroethane	Water Board	Regional Water Quality Control Board

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA

Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase I Sediment Samples								
Aluminum	mg/kg	15	15/15	8630	31900	22095	25084	SS14
Antimony	mg/kg	15	2/15	1.9	6	1.2	1.8	F
Arsenic	mg/kg	15	2/15	1.1	1.4	3.5	4.6	SS14
Barium	mg/kg	15	15/15	25.3	76	61.4	70.8	SS14
Beryllium	mg/kg	15	15/15	0.77	2.4	1.5	1.7	SS14
Calcium	mg/kg	15	15/15	3900	7770	5232	5885	J
Chromium	mg/kg	15	15/15	39.6	110	81.5	90.8	G
Cobalt	mg/kg	15	15/15	8.7	20.6	16.0	17.3	SS11
Copper	mg/kg	15	15/15	14.7	91	51.5	60.4	F
Iron	mg/kg	15	15/15	17600	45800	33564	37193	SS14
Lead	mg/kg	5	5/5	2.5	35.7	16.9	34.9	F
Magnesium	mg/kg	15	15/15	4970	15600	11475	12827	SS14
Manganese	mg/kg	15	15/15	165	418	311	345	SS12
Mercury	mg/kg	15	14/15	0.2	1.2	0.42	0.63	D
Nickel	mg/kg	15	15/15	36.8	109	80.6	89.6	SS12
Potassium	mg/kg	15	15/15	1890	5740	3952	4451	SS14
Sodium	mg/kg	15	15/15	4040	18600	11669	13753	SS14
Vanadium	mg/kg	15	15/15	31.3	88.4	63.6	70.8	SS14
Zinc	mg/kg	15	15/15	40.9	154	111	125	G
4,4'-DDD	mg/kg	15	15/15	0.0008	0.0130	0.0051	0.0069	F
4,4'-DDE	mg/kg	15	15/15	0.0002	0.0041	0.0024	0.0030	E, F
4,4'-DDT	mg/kg	15	12/15	0.0005	0.0130	0.0017	0.0033	B
Aldrin	mg/kg	15	1/15	0.006	0.006	0.001	0.002	B
Alpha-BHC	mg/kg	15	9/15	0.0004	0.0053	0.0018	0.0033	F
Alpha-chlordane	mg/kg	15	11/15	0.0002	0.0032	0.0012	0.0023	G
Aroclor-1260	mg/kg	15	15/15	0.011	0.21	0.08	0.10	B
Beta-BHC	mg/kg	15	11/15	0.0002	0.0027	0.0010	0.0017	G

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)

Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase I Sediment Samples (Cont'd)								
Delta-BHC	mg/kg	15	5/15	0.0001	0.0018	0.0006	0.0008	SS12
Dieldrin	mg/kg	15	12/15	0.0009	0.0048	0.0025	0.0033	E
Endosulfan I	mg/kg	15	11/15	0.0006	0.0091	0.0021	0.0043	G
Endosulfan II	mg/kg	15	14/15	0.0004	0.0047	0.0016	0.0024	SS11
Gamma-BHC (Lindane)	mg/kg	15	1/15	0.0007	0.0007	0.0005	0.0006	J
Gamma-chlordane	mg/kg	15	9/15	0.0000	0.0030	0.0012	0.0059	G
Heptachlor	mg/kg	15	1/15	0.0005	0.0005	0.0005	0.0006	C
Heptachlor epoxide	mg/kg	15	7/15	0.0002	0.0049	0.0011	0.0023	G
Methoxychlor	mg/kg	15	4/15	0.0052	0.0120	0.0026	0.0053	SS11
Anthracene	mg/kg	15	1/15	0.55	0.55	0.34	0.38	SS11
Benzo(a)anthracene	mg/kg	15	4/15	0.25	1	0.36	0.44	SS11
Benzo(a)pyrene	mg/kg	15	10/15	0.15	1.8	0.44	0.65	SS11
Benzo(b)fluoranthene	mg/kg	15	13/15	0.14	4.1	0.78	1.5	SS11
Benzo(g,h,i)perylene	mg/kg	15	8/15	0.19	0.63	0.34	0.42	I
Chrysene	mg/kg	15	10/15	0.15	2	0.46	0.69	SS11
Dibenz(a,h)anthracene	mg/kg	15	1/15	0.36	0.36	0.32	0.36	SS11
Fluoranthene	mg/kg	15	10/15	0.13	1.4	0.48	0.70	C
Indeno(1,2,3-cd)pyrene	mg/kg	15	5/15	0.21	0.8	0.36	0.43	SS11
Phenanthrene	mg/kg	15	6/15	0.18	0.69	0.35	0.42	C
Pyrene	mg/kg	15	14/15	0.17	2	0.62	1.02	SS11
Phase I Stormwater Samples								
Aluminum	µg/L	10	10/10	277	14900	1836	9227	H
Antimony	µg/L	10	4/10	5.3	12	9.2	25.5	H
Arsenic	µg/L	10	1/10	9	9	2.7	4.2	A
Barium	µg/L	10	5/10	6.8	280	37.6	158	H
Beryllium	µg/L	10	4/10	0.8	2.3	0.83	1.54	D
Cadmium	µg/L	10	1/10	7.7	7.7	2.3	3.58	G
Calcium	µg/L	10	10/10	3910	102000	37368	57543	D
Chromium	µg/L	10	6/10	5.9	52.5	10.6	28.8	H
Copper	µg/L	10	8/10	14	82.5	37.0	56.2	H

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase I Stormwater Samples (Cont'd)								
Iron	µg/L	10	10/10	362	21000	2581	12969	H
Lead	µg/L	10	8/10	4.4	257	29.1	231	H
Magnesium	µg/L	10	10/10	1830	289000	105601	1749736	D
Manganese	µg/L	10	10/10	28.3	628	165	550	H
Mercury	µg/L	10	2/10	0.28	0.88	0.21	0.37	B
Nickel	µg/L	10	2/10	19.3	65	18.2	29.6	H
Potassium	µg/L	10	10/10	1490	103000	34793	249837	D
Sodium	µg/L	10	10/10	7950	2970000	1398339	78904712	D
Vanadium	µg/L	10	5/10	7.6	48.8	12.6	36.6	H
Zinc	µg/L	10	8/10	58	826	240	1108	H
4,4'-DDD	µg/L	10	1/10	0.02	0.02	0.05	0.05	G
4,4'-DDT	µg/L	10	5/10	0.02	0.13	0.05	0.09	B
Alpha-BHC	µg/L	10	4/10	0.01	0.03	0.02	0.03	G
Alpha-chlordane	µg/L	10	2/10	0.01	0.02	0.02	0.03	J
Delta-BHC	µg/L	10	3/10	0.01	0.03	0.02	0.03	A
Dieldrin	µg/L	10	4/10	0.01	0.01	0.04	0.05	A, E, J
Endosulfan I	µg/L	10	5/10	0.01	0.03	0.02	0.03	G
Endrin	µg/L	10	2/10	0.01	0.02	0.04	0.05	G
Endrin aldehyde	µg/L	10	2/10	0.01	0.01	0.04	0.05	A, G
Gamma-BHC (Lindane)	µg/L	10	5/10	0.01	0.07	0.03	0.04	G
Gamma-chlordane	µg/L	10	1/10	0.01	0.01	0.02	0.03	G
Heptachlor	µg/L	10	2/10	0.02	0.03	0.03	0.03	A
Heptachlor epoxide	µg/L	10	1/10	0.01	0.01	0.02	0.03	G
Phase II Investigation Sediment Sample Results								
Aluminum	mg/kg	102	102/102	4370	31300	19538	20653	D2
Antimony	mg/kg	102	88/102	0.88	3.2	1.6	1.8	D2
Arsenic	mg/kg	102	102/102	3.9	18	9.7	10.1	E3
Barium	mg/kg	102	102/102	8.7	90.1	53.5	57.8	E3
Beryllium	mg/kg	102	4/102	0.099	0.18	0.04	0.05	C4

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase II Investigation Sediment Sample Results (Cont'd)								
Cadmium	mg/kg	102	17/102	0.1	0.73	0.08	0.09	B7
Calcium	mg/kg	102	102/102	3090	105000	7053	7856	A9
Chromium	mg/kg	102	102/102	27	118	75.3	78.5	D2
Cobalt	mg/kg	102	102/102	4.8	44.4	15.7	16.5	E3
Copper	mg/kg	102	102/102	6.5	73.8	41.5	44.1	D2
Iron	mg/kg	102	102/102	12200	64600	34241	35806	E3
Lead	mg/kg	102	102/102	5.1	133	28.7	31.9	E4
Magnesium	mg/kg	102	102/102	3100	18600	12231	12838	C5
Manganese	mg/kg	102	102/102	120	750	371	392	B9
Mercury	mg/kg	102	95/102	0.08	1	0.36	0.38	E9
Molybdenum	mg/kg	71	1/71	12.7	12.7	0.30	0.59	B3
Nickel	mg/kg	102	102/102	24.3	171	82.5	87.6	E3
Potassium	mg/kg	102	102/102	756	5380	3232	3416	D2
Selenium	mg/kg	102	14/102	0.93	2.1	0.57	0.62	C12
Sodium	mg/kg	102	102/102	1630	21300	10942	12330	D7
Vanadium	mg/kg	102	102/102	19.3	85.2	56.6	59.2	D2
Zinc	mg/kg	102	102/102	26.7	543	112	121	A6
4,4'-DDD	mg/kg	102	7/102	0.0011	0.0023	0.0017	0.0018	C4
4,4'-DDE	mg/kg	102	1/102	0.0016	0.0016	0.0016	0.0018	A14
4,4'-DDT	mg/kg	102	10/102	0.0015	0.0270	0.0021	0.0024	G2
Aldrin	mg/kg	102	11/102	0.0006	0.0035	0.0010	0.0011	A13
Aroclor-1254	mg/kg	102	2/102	0.056	0.170	0.018	0.021	A8
Aroclor-1260	mg/kg	102	16/102	0.012	0.240	0.023	0.026	A6
Endosulfan sulfate	mg/kg	102	1/102	0.001	0.001	0.002	0.002	A2
Endrin	mg/kg	102	2/102	0.0016	0.0024	0.0017	0.0018	D8
Endrin ketone	mg/kg	102	1/102	0.0022	0.0022	0.0017	0.0018	A14
Gamma-BHC (Lindane)	mg/kg	102	2/102	0.0011	0.0014	0.0009	0.0009	D8
Gamma-chlordane	mg/kg	102	1/102	0.0026	0.0026	0.0009	0.0010	A8
Dibutyltin	mg/kg	102	4/102	0.0200	0.0200	0.0056	0.0060	B6, B7, B8, E5

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase II Investigation Sediment Sample Results (Cont'd)								
Tetrabutyltin	mg/kg	102	4/102	0.033	0.047	0.006	0.007	B8
Tributyltin	mg/kg	102	4/102	0.034	0.039	0.006	0.006	B8
Acenaphthene	mg/kg	102	1/102	0.034	0.034	0.03	0.03	G8
Acenaphthylene	mg/kg	102	11/102	0.043	0.08	0.03	0.03	A6
Anthracene	mg/kg	102	33/102	0.043	0.65	0.05	0.06	A13
Benzo(a)anthracene	mg/kg	102	59/102	0.031	0.72	0.11	0.13	A13
Benzo(a)pyrene	mg/kg	102	82/102	0.04	1.13	0.18	0.22	E1
Benzo(b)fluoranthene	mg/kg	102	83/102	0.034	1.540	0.197	0.246	E1
Benzo(g,h,i)perylene	mg/kg	102	69/102	0.035	0.340	0.100	0.118	E1
Benzo(k)fluoranthene	mg/kg	102	42/102	0.035	0.530	0.059	0.068	E1
Chrysene	mg/kg	102	66/102	0.033	0.770	0.147	0.187	A6
Dibenz(a,h)anthracene	mg/kg	102	8/102	0.042	0.097	0.028	0.030	E1
Fluoranthene	mg/kg	102	85/102	0.031	2.7	0.27	0.34	A6
Fluorene	mg/kg	102	4/102	0.038	0.061	0.03	0.03	A13
Indeno(1,2,3-cd)pyrene	mg/kg	102	54/102	0.04	0.34	0.08	0.09	E1
Phenanthrene	mg/kg	102	56/102	0.035	0.57	0.12	0.15	A13
Pyrene	mg/kg	102	92/102	0.04	2.47	0.33	0.42	A6
Diesel range organics	mg/kg	102	7/102	26	120	12.5	13.7	A9
Motor oil range organics	mg/kg	102	102/102	14	280	68.1	75.6	B7
Phase II Investigation Pore Water Sample Results								
Aluminum	µg/L	78	11/78	12.4	840	114	178	C6
Antimony	µg/L	78	6/78	2.2	63	6.42	9.28	D4
Arsenic	µg/L	78	66/78	2.5	98.9	18.7	22.7	D6
Barium	µg/L	78	78/78	16.9	200	44.4	50.4	B10
Calcium	µg/L	78	78/78	179000	330000	240744	250612	C11
Chromium	µg/L	78	16/78	1.5	28.6	3.5	6.4	C1
Cobalt	µg/L	78	19/78	0.46	19.3	3.0	4.1	B10
Copper	µg/L	78	29/78	1.4	53.4	17.5	33.5	C10
Iron	µg/L	78	68/78	206	28300	9506	16072	E8

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase II Investigation Pore Water Sample Results (Cont'd)								
Lead	µg/L	78	1/78	1.9	1.9	2.4	3.0	E2
Magnesium	µg/L	78	78/78	765000	1110000	921474	934548	B3
Manganese	µg/L	78	78/78	130	25000	3860	5364	E8
Mercury	µg/L	78	8/78	0.1	1.5	0.23	0.32	B8
Molybdenum	µg/L	78	64/78	4.1	35.1	12.1	13.6	D4
Nickel	µg/L	78	16/78	4.7	22.2	4.3	5.2	D4
Potassium	µg/L	78	78/78	184000	465000	321974	335323	C10
Selenium	µg/L	78	8/78	2.2	4	5.7	7.6	A11
Sodium	µg/L	78	78/78	5610000	8340000	7239359	7349021	B3
Thallium	µg/L	78	2/78	2.9	7.8	5.2	6.5	E6
Vanadium	µg/L	78	4/78	0.96	6.1	1.2	1.5	B3
Zinc	µg/L	78	5/78	17.6	55.2	9.7	11.2	D4
4,4'-DDD	µg/L	78	3/78	0.01	0.015	0.010	0.010	G9
4,4'-DDE	µg/L	78	3/78	0.014	0.042	0.010	0.010	G9
4,4'-DDT	µg/L	78	7/78	0.011	0.088	0.010	0.010	G9
Endosulfan sulfate	µg/L	78	8/78	0.01	0.034	0.010	0.010	D3
Endrin aldehyde	µg/L	78	1/78	0.015	0.015	0.010	0.010	B8
Gamma-BHC (Lindane)	µg/L	78	3/78	0.013	0.017	0.0054	0.006	C1, C6
1,1-biphenyl	µg/L	55	7/55	0.01	0.03	0.01	0.01	A6
1-methylnaphthalene	µg/L	55	36/55	0.01	0.08	0.02	0.02	G1
1-methylphenanthrene	µg/L	55	5/55	0.01	0.1	0.01	0.01	B8
2,3,5-trimethylnaphthalene	µg/L	55	18/55	0.01	0.1	0.02	0.02	A4, G20
2,6-dimethylnaphthalene	µg/L	55	15/55	0.01	0.7	0.02	0.02	G1
2-methylnaphthalene	µg/L	78	34/78	0.01	0.1	0.17	0.28	G1
Acenaphthene	µg/L	78	32/78	0.01	2.0	0.27	0.50	A6
Acenaphthylene	µg/L	78	1/78	0.03	0.03	0.16	0.20	A6
Anthracene	µg/L	78	12/78	0.01	0.09	0.16	0.32	A5
Benzo(a)anthracene	µg/L	78	24/78	0.01	0.06	0.16	0.31	A4, B8, G8
Benzo(a)pyrene	µg/L	78	23/78	0.01	0.07	0.16	0.31	A5

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Phase II Investigation Pore Water Sample Results (Cont'd)								
Benzo(b)fluoranthene	µg/L	78	39/78	0.01	0.08	0.16	0.30	G8
Benzo(e)pyrene	µg/L	55	17/55	0.01	0.10	0.01	0.02	G8
Benzo(g,h,i)perylene	µg/L	78	15/78	0.01	0.04	0.16	0.30	A5, G8
Benzo(k)fluoranthene	µg/L	78	10/78	0.01	0.04	0.16	0.30	A5
Chrysene	µg/L	78	28/78	0.01	0.20	0.18	0.33	G8
Dibenz(a,h)anthracene	µg/L	78	1/78	0.02	0.02	0.02	0.20	G8
Dibenzothiophene	µg/L	55	6/55	0.02	0.10	0.01	0.01	A6
Fluoranthene	µg/L	78	45/78	0.01	0.90	0.23	0.37	A4
Fluorene	µg/L	78	31/78	0.01	0.30	0.19	0.35	A6
Indeno(1,2,3-cd)pyrene	µg/L	78	10/78	0.01	0.03	0.16	0.30	A5
Naphthalene	µg/L	78	14/78	0.02	0.30	0.20	0.31	G1, G17
Perylene	µg/L	55	6/55	0.01	0.20	0.01	0.01	G8
Phenanthrene	µg/L	78	29/78	0.01	0.30	0.22	0.36	A6, A10
Pyrene	µg/L	78	46/78	0.01	0.90	0.24	0.37	A4
TPH-Diesel	mg/L	78	47/78	0.052	1.8	0.11	0.12	E1
TPH-Motor oil	mg/L	78	54/78	0.055	8.9	0.26	0.34	E1
Site 12 Offshore Investigation Sediment Sample Results								
Aluminum	mg/kg	11	11/11	6680	14000	9517	10860	SS024
Arsenic	mg/kg	11	11/11	5.9	9.4	7.3	7.9	SS024
Barium	mg/kg	11	11/11	23	41.7	31.3	34.2	SS004
Beryllium	mg/kg	11	9/11	0.2	0.35	0.22	0.27	SS024
Cadmium	mg/kg	11	2/11	0.39	0.48	0.24	0.29	SS024
Calcium	mg/kg	11	11/11	4560	14800	11175	14970	SS005
Chromium	mg/kg	11	11/11	33.6	71.6	49.6	55.9	SS005
Cobalt	mg/kg	11	11/11	7.6	13.8	10.1	11.4	SS024
Copper	mg/kg	11	11/11	10.7	576	49.6	141	SS009
Iron	mg/kg	11	11/11	17500	27900	21439	23745	SS024
Lead	mg/kg	11	11/11	7.9	90.1	45.1	91.4	SS005
Magnesium	mg/kg	11	11/11	5380	11600	7520	8490	SS024

TABLE 3: OFFSHORE SEDIMENTS DESCRIPTIVE SAMPLING DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Analyte	Units	Total No. Samples	Frequency of Detection	Minimum Detection	Maximum Detection	Mean	95%UCL	Location of Maximum Detect
Site 12 Offshore Investigation Sediment Sample Results (Cont'd)								
Manganese	mg/kg	11	11/11	184	281	228	242	SS005
Mercury	mg/kg	11	11/11	0.07	0.24	0.16	0.19	SS024
Nickel	mg/kg	11	11/11	35.8	83.1	52.7	59.4	SS024
Potassium	mg/kg	11	11/11	1130	3040	1932	2281	SS024
Selenium	mg/kg	11	3/11	0.39	0.58	0.27	0.35	SS009
Silver	mg/kg	11	1/11	0.39	0.39	0.21	0.25	SS024
Sodium	mg/kg	11	11/11	3140	8030	4856	5666	SS024
Thallium	mg/kg	11	7/11	1.8	3.5	1.8	2.3	SS024
Vanadium	mg/kg	11	11/11	30.2	47.1	37.0	40.1	SS024
Zinc	mg/kg	11	11/11	37.9	136	86.2	103	SS001
Aroclor-1254*	mg/kg	2	2/2	0.032	0.041	0.04	NE	SS002
Aroclor-1260*	mg/kg	2	2/2	0.029	0.031	0.03	NE	SS002
Aroclor-1254**	mg/kg	6	3/6	0.022	0.13	0.04	0.09	SS002
Aroclor-1260**	mg/kg	6	2/6	0.034	0.45	0.11	0.29	SS002
Site 11 Beach Investigation Sediment Sample Results								
Aroclor-1260**	mg/kg	14	8/14	0.003	0.055	0.011	0.068	BS01
TPH-Diesel	mg/kg	6	6/6	5.9	310	129	2375	BS01
TPH-Motor Oil	mg/kg	6	4/6	77	180	82.2	134	BS01
TPH-Gasoline	mg/kg	6	3/6	0.26	3.9	0.90	2.13	BS01

Notes:

Multiple entries in "Location of Maximum Dectect" field indicates the same maximum concentration was detected at more than one location.

Sample locations are shown on Figure 5.

* Analyzed using low level detection limits

** Analyzed using standard detection limits

µg/L Micrograms per liter
BHC Hexachlorocyclohexane
DDD 4,4,-dichlorodiphenyldichlorethane
DDE 4,4,-dichlorodiphenyldichloroethylene
DDT 4,4,-dichlorodiphenyltrichloroethane
mg/kg Milligrams per kilogram
NE Not evaluated
TPH Total Petroleum hydrocarbon
UCL Upper Confidence Liimit

TABLE 4: OFFSHORE SEDIMENTS BIOASSAY DATA

Site 13 ROD, NAVSTA TI, San Francisco, California

Amphipod							
Sample Location	Reburial and Survival (%)	Pretest Results		Sample Location	Reburial and Survival (%)	Pretest Results	
		Long[a]	Short[b]			Long[a]	Short[b]
A1	73			G1	96		
A3	73			G3	88		
A5	90			G4	64		
A7	64			G6	78		
A8	69			G8	91		
A10	65			G10	66	93	76
A13	68			G13	61	95	90
B2	90			G15	84		
B4	61			G17	84		
B5	71			G18	72		
B7	68			G20	88		
B8	62			R1	45		
B10	46			R2	59		
C1	85			R3	45		
C3	59			R4	51		
C6	58			R5	56		
C7	41	77	65	R6	51		
C8	55			S2	42		
C11	60			S3	44		
C13	42			S7	31		
D1	63			S11	36		
D4	55			LCS-1	97		
D6	39	75	50	LCS-2	99		
D9	59			LCS-3	100		
E1	49			LCS-4	99		
E3	47			LCS-5	99		
E5	65			LCS-6	97		
E7	93						
E9	32	82	69				

Notes:

a 10-day acclimation period for salinity change and holding time during the Navy's Sediment Work Group's pre-test evaluation.

b 4-day acclimation period for salinity change and holding time during the Navy's Sediment Work Group's pre-test evaluation.

Blank cell Pretest was not conducted at these sample locations.

At the request of the Water Board, the Navy collected sediment and bioassay samples at Paradise Cove in the SF Bay area to use as a reference data set.

Sample locations are shown on Figure 5.

LCS	Laboratory control sample	ROD	Record of Decision
NAVSTA TI	Naval Station Treasure Island	SF Bay	San Francisco Bay
Navy	U.S. Department of the Navy	Water Board	Regional Water Quality Control Board
R	Paradise Cove Reference Sediment		

TABLE 5: OFFSHORE SEDIMENTS TISSUE RESIDUE DATA

Site 13 ROD, NAVSTA TI, San Francisco, California

	Clipper Cove – Areas C and D								Area E					
	Crab Tissue 1		Fish Tissue 1		Clam Tissue 1		Clam Tissue 2		Crab Tissue 1		Crab Tissue 2		Polychaete Tissue 1	
	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier
Inorganics (mg/kg wet weight)														
Aluminum	127		27.6		325		371		47.7		40.4		184	
Antimony	-	U	-	U	-	U	-	U	0.29	U	0.31	U	0.32	U
Arsenic	0.97		-	U	0.96		1.5		0.74		0.63		0.76	
Barium	7.4		0.35	J	1.0	J	1.6	J	5.2	J	4.6	J	0.63	J
Beryllium	0.020	J	-	U	0.010	J	0.010	J	0.020	J	0.020	J	0.010	U
Cadmium	-	U	-	U	0.19		0.070	J	0.030	J	0.030	U	0.030	U
Calcium	51500		6410		2010		2930		48000		41100		549	
Chromium	0.63		0.26	J	1.3		1.3		0.69		0.36		1.0	
Cobalt	-	U	-	U	0.25	J	0.17	J	0.11	U	0.12	U	0.26	J
Copper	25.8		0.69	J	4.4		3.2		26.0		25.6		2.0	
Iron	178		49.2		495		961		74.0		63.1		364	
Lead	-	U	-	U	0.79	J	2.5	J	0.080	U	0.090	U	2.2	J
Magnesium	3040		860		949		1060		2680		2440		896	
Manganese	20.5		1.6		16.1		25.7		11.0		8.8		7.3	
Mercury	0.060		0.020		0.030		0.030		0.010	U	0.020		0.010	J
Molybdenum	0.10	J	-	U	0.35		0.27	J	0.11	J	0.090	J	0.080	J
Nickel	0.52	J	-	U	1.7		1.4		0.36	J	0.15	J	0.97	J
Potassium	2020		1510		2200		1740		2340		2270		2180	
Selenium	-	UJ	-	UJ	1.5		1.3		0.53	UJ	0.41	UJ	0.30	UJ
Silver	-	U	-	U	-	U	-	U	0.090	U	0.10	U	0.10	U
Sodium	4320		5360		4960		5500		4560		4870		3970	
Thallium	-	U	-	U	-	U	-	U	0.18	U	0.20	U	0.20	U
Vanadium	0.97	J	-	U	1.2	J	1.5	J	0.28	J	0.25	J	0.72	J
Zinc	20.5	J	12.5	J	23.7	J	19.7	J	48.8	J	19.5	J	20.3	J

TABLE 5: OFFSHORE SEDIMENTS TISSUE RESIDUE DATA (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

	Clipper Cove – Areas C and D								Area E					
	Crab Tissue 1		Fish Tissue 1		Clam Tissue 1		Clam Tissue 2		Crab Tissue 1		Crab Tissue 2		Polychaete Tissue 1	
	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier
Pesticides (µg/kg wet weight)														
2,4'-DDD	-	U	-	U	0.3	J	-	UJ	0.6	U	0.6	U	2	
2,4'-DDE	0.4		-	U	-	U	-	UJ	0.2	U	0.3	U	0.3	U
2,4'-DDT	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
4,4'-DDD	1	J	5		0.7		0.4	J	0.6	UJ	0.6	U	2	J
4,4'-DDE	4		11	J	2	J	-	UJ	2	J	2	U	2	U
4,4'-DDT	0.7		-	U	-	U	-	U	0.1	J	0.2	U	4	J
Total DDT	6.10		16		3		0.4		2.1			U	8	
Aldrin	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	J
alpha-BHC	0.3	J	-	U	0.3	J	-	U	0.1	J	0.3	U	0.4	J
alpha-Chlordane	-	U	3	J	0.4		0.6		0.4	U	0.4	U	2	J
beta-BHC	0.1	J	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
cis-Nonachlor	-	U	3	J	-	UJ	-	UJ	2	U	2	U	2	U
delta-BHC	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
Dieldrin	0.6		0.4	J	0.4		-	U	0.5		0.4		0.1	U
Endosulfan I	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
Endosulfan II	-	U	-	U	-	U	-	U	0.8	U	0.8	U	0.8	U
Endosulfan sulfate	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
Endrin	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
Endrin aldehyde	-	UJ	-	U	-	U	-	U	0.1	UJ	0.1	UJ	0.1	U
Endrin ketone	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
gamma-BHC (Lindane)	-	U	-	U	0.3		-	U	0.1	U	0.1	U	0.1	U
Gamma-chlordane	-	U	0.9	J	-	U	-	U	0.2	U	0.2	U	0.2	U
Heptachlor	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
Heptachlor epoxide	0.2	J	-	U	-	U	-	U	0.2	J	0.1	U	0.1	U
Hexachlorobenzene	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
Methoxychlor	-	U	-	U	-	U	-	U	0.4	U	0.4	U	0.4	U
Mirex	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U

TABLE 5: OFFSHORE SEDIMENTS TISSUE RESIDUE DATA (CONTINUED)

Site 13 ROD, NAVSTA TI, San Francisco, California

	Clipper Cove – Areas C and D								Area E					
	Crab Tissue 1		Fish Tissue 1		Clam Tissue 1		Clam Tissue 2		Crab Tissue 1		Crab Tissue 2		Polychaete Tissue 1	
	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier
Pesticides (µg/kg wet weight) (Cont'd)														
Oxychlordane	4		0.3	J	-	U	-	U	1		1		0.2	U
Toxaphene	-	U	-	U	-	U	-	U	50	U	50	U	50	U
trans-Nonachlor	-	U	3	J	-	U	-	U	0.3	U	0.3	U	0.7	J
PCBs (µg/kg wet weight)														
PCB-101 (2,2',3,5,5')	-	U	1	J	0.2	J	-	UJ	1	U	1	U	0.2	J
PCB-105 (2,3,3',4,4')	0.2	J	-	U	-	U	-	U	0.2	UJ	0.2	U	0.3	J
PCB-114 (2,3,4,4',5)	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
PCB-118 (2,3',4,4',5)	-	UJ	2	J	-	UJ	-	UJ	0.8	UJ	0.8	U	2	J
PCB-123 (2',3,4,4',5)	-	U	-	U	-	U	-	U	0.4	U	0.4	U	0.4	U
PCB-126 (3,3',4,4',5)	-	U	-	U	-	U	-	U	0.3	U	0.3	U	0.3	U
PCB-128 (2,2',3,3',4,4')	0.2	J	0.6	J	-	U	-	U	0.2	U	0.2	U	0.2	U
PCB-138 (2,2',3,4,4',5')	-	UJ	5		-	UJ	-	UJ	2	UJ	2	U	2	UJ
PCB-153 (2,2',4,4',5,5')	2		6		-	UJ	-	UJ	0.8	U	0.8	U	2	
PCB-156 (2,3,3',4,4',5)	-	U	0.3	J	-	U	-	U	0.1	U	0.1	J	0.1	U
PCB-157 (2,3,3',4,4',5')	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
PCB-167 (2,3',4,4',5,5')	-	U	-	U	-	U	-	U	0.5	U	0.5	U	0.5	U
PCB-169 (3,3',4,4',5,5')	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
PCB-170 (2,2',3,3',4,4',5)	-	U	3	J	-	U	-	UJ	0.40	UJ	0.4	UJ	0.4	U
PCB-18 (2,2',5)	-	U	-	U	-	U	-	U	0.5	U	0.5	U	0.5	U
PCB-180 (2,2',3,4,4',5,5')	0.5	J	4		-	U	-	U	0.4		0.2	U	0.3	U
PCB-187 (2,2',3,4',5,5',6)	-	U	2	J	-	U	-	UJ	0.5	U	0.5	U	0.5	U
PCB-189 (2,3,3',4,4',5,5')	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
PCB-195 (2,2',3,3',4,4',5,6)	-	U	0.3	J	-	U	-	U	0.1	U	0.1	U	0.1	U
PCB-206 (2,2',3,3',4,4',5,5',6	-	U	0.3		-	U	-	U	0.2	U	0.2	U	0.2	U
PCB-209 (2,2',3,3',4,4',5,5',6	-	U	-	UJ	-	U	-	U	0.2	U	0.2	U	0.2	U
PCB-28 (2,4,4')	-	U	-	U	-	U	-	U	0.1	U	0.1	U	0.1	U
PCB-44 (2,2',3,5')	-	U	-	U	-	U	-	U	0.4	U	0.4	U	0.4	U

TABLE 5: OFFSHORE SEDIMENTS TISSUE RESIDUE DATA (CONTINUED)

Site 13 ROD, NAVSTA TI, San Francisco, California

	Clipper Cove – Areas C and D								Area E					
	Crab Tissue 1		Fish Tissue 1		Clam Tissue 1		Clam Tissue 2		Crab Tissue 1		Crab Tissue 2		Polychaete Tissue 1	
	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier
PCBs (µg/kg wet weight) (Cont'd)														
PCB-52 (2,2',5,5')	-	U	0.6		0.5		-	U	0.2	U	0.2	U	0.7	J
PCB-66 (2,3',4,4')	-	U	-	U	-	U	-	U	0.3	U	0.3	U	0.3	U
PCB-77 (3,3',4,4')	-	U	-	U	-	U	-	U	0.2	U	0.2	U	0.2	U
PCB-8 (2,4')	-	U	-	U	-	U	-	U	0.4	U	0.4	U	0.4	U
Total PCB	2.70		25.1		0.7		-	U	0.4		0.1		5.2	
Organotins (µg/kg wet weight)														
Dibutyltin	-	U	-	UJ	-	UJ	2	UJ	1	UJ	1	UJ	1	UJ
Monobutyltin	-	UJ	-	UJ	-	UJ	1	UJ	1	UJ	1	UJ	1	UJ
Tetrabutyltin	-	U	-	U	-	U	2	U	2	U	2	U	2	U
Tributyltin	-	U	-	U	19		34		2	U	2	U	2	U
PAHs (µg/kg wet weight)														
1-Methylnaphthalene	-	UJ	-	UJ	-	UJ	4	UJ	4	UJ	4	UJ	5	UJ
1-Methylphenanthrene	-	U	-	UJ	-	UJ	4	UJ	4	UJ	4	UJ	4	UJ
2,3,5 Trimethylnaphthalene	-	UJ	-	UJ	-	UJ	4	UJ	4	UJ	4	UJ	4	UJ
2,6 Dimethylnaphthalene	-	UJ	-	UJ	-	UJ	4	UJ	4	UJ	8	UJ	4	UJ
2-Methylnaphthalene	-	UJ	-	UJ	-	UJ	7	UJ	4	UJ	4	UJ	7	UJ
Acenaphthene	-	UJ	-	UJ	-	UJ	4	UJ	4	UJ	4	UJ	16	J
Acenaphthylene	-	UJ	-	UJ	-	UJ	4	UJ	4	UJ	8	J	2	J
Anthracene	-	U	-	UJ	-	UJ	4	UJ	4	UJ	4	UJ	2	J
Benzo(a)anthracene	-	U	-	UJ	14	J	5	J	4	UJ	4	UJ	4	J
Benzo(a)pyrene	-	U	-	U	9	J	9	J	4	UJ	4	UJ	3	J
Benzo(b)fluoranthene	-	U	-	U	11	J	19	J	4	UJ	4	UJ	11	
Benzo(e)pyrene	-	U	-	U	19	J	14	J	4	UJ	4	UJ	8	
Benzo(g,h,i)perylene	-	U	-	U	10	J	10	J	4	UJ	4	UJ	4	U
Benzo(k)fluoranthene	-	U	-	U	12	J	4	UJ	4	UJ	4	UJ	3	J
Biphenyl	-	UJ	-	UJ	-	UJ	3	J	4	UJ	4	UJ	4	UJ
Chrysene	-	U	-	U	19	J	7	J	4	UJ	4	UJ	26	

TABLE 5: OFFSHORE SEDIMENTS TISSUE RESIDUE DATA (CONTINUED)

Site 13 ROD, NAVSTA TI, San Francisco, California

	Clipper Cove – Areas C and D								Area E					
	Crab Tissue 1		Fish Tissue 1		Clam Tissue 1		Clam Tissue 2		Crab Tissue 1		Crab Tissue 2		Polychaete Tissue 1	
	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier	Conc.	Qualifier
PAHs (µg/kg wet weight) (Cont'd)														
Dibenz(a,h)anthracene	-	U	-	U	-	UJ	4	UJ	4	UJ	4	UJ	4	U
Dibenzothiophene	-	U	-	U	-	UJ	4	UJ	4	UJ	4	UJ	4	U
Fluoranthene	-	U	-	UJ	42	J	16	J	4	UJ	4	UJ	37	J
Fluorene	-	U	-	U	5	J	3	J	4	UJ	4	UJ	14	
Indeno(1,2,3-cd)pyrene	-	U	-	U	6	J	6	J	4	UJ	4	UJ	4	U
Naphthalene	3	J	3	J	8	J	4	UJ	4	UJ	4	UJ	3	J
Perylene	-	U	-	U	14	J	24	J	4	UJ	4	UJ	4	U
Phenanthrene	2	J	3	J	7	J	6	J	2	J	4	UJ	25	J
Pyrene	-	U	-	UJ	27	J	16	J	4	UJ	4	UJ	14	J
Total PAH	5.00		6		203		138		2		8		168	
Other Parameters														
%Lipids	1.10		1.1		0.8		0.4		1.2		0.8		2.2	
%Solids	38.10		10.3		18		11.9		36.5		33.9		18.4	

Notes:

µg//kg	Micrograms per kilogram wet weight
BHC	Hexachlorocyclohexane
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
mg/kg	Milligrams per kilogram wet weight
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
Total DDT	Sum of DDT, DDE and DDD
Total PAH	Sum of PAH
Total PCB	Sum of PCB Congeners

Blank Qualifier	Detect
J	Estimated
U	Nondetect
UJ	Undetected, estimated

TABLE 6: OFFSHORE SEDIMENTS LIST OF CHEMICALS OF POTENTIAL ECOLOGICAL CONCERN
Site 13 ROD, NAVSTA TI, San Francisco, California

Chemical of Ecological Concern	Area A	Area B	Area C	Area D	Area E	Area G
Inorganics						
Antimony		SED	SED*, SD	SED		
Arsenic			PW	PW		
Copper	SW	SW	PW, SW	SED*, PW, SD, SW		SW
Lead	SW	SW	SW	SED	SED	SED
Mercury	SED, SW	SED, PW, SD	SED, SD	SED, SD	SED, PW	PW
Nickel		PW, SW	PW, SW	PW, SED	PW	
Selenium	SED	SED	SED		SED	SED
Zinc	SED, SW		SW	SED*, SW		SW
Organics						
4,4'- DDE	SED, SD	SD	SED*, SD	SD		SED, SD
4,4'-DDD	SD	SD	SD	SD		
4,4'-DDT	PW, SD, SW	SW	SED*, SW	SW	PW	SED, PW, SW
Total DDTs	SD	SED, SD	SED, SD	SED, SD		SED, SD
Dieldrin	SD, SW	SD, SW	SD, SW	SD		SD, SW
Endrin	SW	SED	SW	SED*, SW		SW
Endosulfan sulfate				PW		
Heptachlor	SW		SW	SW		SW
Heptachlor epoxide			SW	SW		
Total PCBs	SED, SD	SED, SD	SED, SD	SED, SD		SED, SD
Total PAHs	SED, SD	SED	SD	SD	SED, SD	
Tetrabutyltin		SED			SED	
Tributyltin		SED			SED	

Notes: Additional chemicals included as COECs based on a lack of screening values: Barium, Beryllium, Cobalt, Manganese, Vanadium, Aldrin, Alpha-BHC, Beta-BHC, Delta-BHC, Endrin Aldehyde, Endosulfan I, Endosulfan II, Endosulfan sulfate (sediment only), Lindane, Alpha-chlordane, Gamma Chlordane, Heptachlor (sediment only), Heptachlor epoxide (sediment only), and Methoxychlor.

Sample locations are presented in Figure 5.

Blank cell - Not a COEC

*	Subsurface Sediment COEC only	PAH	Polycyclic aromatic hydrocarbon
BHC	Benzene hexachloride	PCB	Polychlorinated biphenyl
COEC	Chemical of ecological concern	PW	Pore water
DDD	Dichlorodiphenyldi-chloroethylene	ROD	Record of decision
DDE	Dichlorodiphenyldichloroethene	SD	Phase I storm drain sediment
DDT	Dichlorodiphenyltrichloroethane	SED	Phase II sediment
NAVSTA TI	Naval Station Treasure Island	SW	Phase I stormwater

TABLE 7: OFFSHORE SEDIMENTS ECOLOGICAL EXPOSURE PATHWAYS OF CONCERN
Site 13 ROD, NAVSTA TI, San Francisco, California

Exposure Medium	Representative Receptor	T&E Species	Exposure Routes	Assessment Endpoints	Measurement Endpoints
Sediment	Benthic Invertebrates	No	Ingestion, respiration, and direct contact with the sediment	Protection of populations of benthic invertebrates	• Bulk sediment, pore water, and storm water chemical characterization and comparison to guidance values • Biological tests including the 10-day whole sediment bioassay using the estuarine amphipods *Eohaustorius estuarius* • Sediment pore water biological tests including the 72-hour embryo-larval development test using the echinoderm *Strongylocentrotus purpuratus* • Solid phase 20-day growth bioassay on the polychaete *Neanthes arenaceodentata* using whole sediment.
Sediment, Tissue	Willet	No	Ingestion, direct contact with sediment	Protection of benthic-feeding birds (shore birds)	Food chain modeling using measured tissue concentrations in invertebrate tissue.
Sediment, Tissue	Cormorant	No	Ingestion, direct contact with sediment	Protection of piscivorous birds	Food chain modeling using measured tissue concentrations in fish tissue.
Tissue	Peregrine falcon	Yes	Ingestion of contaminated prey	Protection of individual peregrine falcons	Food chain modeling using estimated tissue concentrations in willets.

Note:
T&E Threatened and Endangered

TABLE 8: OFFSHORE SEDIMENTS RISK CHARACTERIZATION METHODOLOGY

Site 13 ROD, NAVSTA TI, San Francisco, California

Assessment Endpoint	Primary Method for Risk Characterization	Sources of Data or Primary Method	Other Data Used in Weight-of-Evidence Approach to Risk Assessment	Linkage to Assessment Endpoint
Protection of populations of benthic invertebrates	• Direct toxicity testing • Use of toxicity derived screening guidelines	• Chemistry data • Amphipod bioassay • Polychaete bioassay • Echinoderm pore water bioassay	Bioavailability data (SEM/AVS, physical parameters)	Direct measure of effects of chemicals on amphipods, polychaetes, and echinoderm larvae
Protection of piscivorous birds (fish eating birds)	Chemical exposure and effects modeling	• Chemistry data • Fish tissue	Literature review	Evaluate potential for food chain transfer from fish to piscivorous birds
Protection of benthic-feeding birds (shore birds)	Chemical exposure and effects modeling	• Chemistry data • Invertebrate tissue	Literature review	Evaluate potential for food chain transfer from invertebrates to shorebirds
Protection of individual threatened and endangered species (Peregrine falcon)	Chemical exposure and effects modeling	• Chemistry data • Estimates of tissue concentration in shorebird prey	Literature review	Evaluate potential for food chain transfer from shorebirds to peregrine

Note:

SEM/AVS Simultaneously extractable metal/acid volatile sulfide

TABLE 9: OFFSHORE SEDIMENTS SAMPLE LOCATION HAZARD INDEX ER-M EXCEEDANCE OF 1.0

Site 13 ROD, NAVSTA TI, San Francisco, California

Sample Location	ER-M-Inorganic Hazard Index	Components of Inorganic Hazard Index	ER-M-Organic Hazard Index	Components of Organic Hazard Index
A6_2	1.32	Zn 1.32	No COPECs	NA
A8	1.47	Hg 0.61, Se 0.86	1.09	DDT, PCB, PAH
B8	1.82	Sb 0.12, Hg 0.70, Se 1.09	No COPECs	NA
B10	2.42	Sb 0.11, Ni 2.31	No COPECs	NA
B11	1.77	Hg 0.77, Se 1.0	No COPECs	NA
C3	1.21	Se 1.21	No COPECs	NA
C4	1.14	Se 1.14	No COPECs	NA
C5	3.09	Hg 0.80, Ni 2.29	No COPECs	NA
C9	1.21	Se 1.21	No COPECs	NA
C12	1.62	Sb 1.21, Se 1.50	No COPECs	NA
D2	2.95	Ni 2.29, Hg 0.66	No COPECs	NA
D3	3.14	Sb 0.11, Hg 0.8, Ni 2.23	No COPECs	NA
D4	3.04	Sb 0.12, Hg 0.73, Ni 2.19	No COPECs	NA
D6	1.00	Hg 1.0	No COPECs	NA
E1	1.39	Pb 0.50, Hg 0.89	No COPECs	NA
E2	1.83	Hg 0.62, Se 1.21	No COPECs	NA
E3	1.16	Pb 0.45, Se 0.71	No COPECs	NA
E3_2	3.03	Hg 0.80, Ni 2.23	No COPECs	NA
E5	1.75	Hg 0.61, Se 1.14	No COPECs	NA
E9	1.66	Pb 0.25, Hg 1.41	No COPECs	NA
G7	1.07	Se 1.07	No COPECs	NA
SS02 (Area A)	No COPECs	NA	2.33	Dieldrin, DDT, PCB, PAH
SS03 (Area A)	No COPECs	NA	1.02	Dieldrin, DDT, PCB, PAH

TABLE 9: OFFSHORE SEDIMENTS SAMPLE LOCATION HAZARD INDEX ER-M EXCEEDANCE OF 1.0 (CONTINUED)

Site 13 ROD, NAVSTA TI, San Francisco, California

Sample Location	ER-M-Inorganic Hazard Index	Components of Inorganic Hazard Index	ER-M-Organic Hazard Index	Components of Organic Hazard Index
SS04 (Area B)	1.69	Hg 1.69	1.49	Dieldrin, DDT, PCB, PAH
SS05 (Area B)	No COPECs	NA	1.69	Dieldrin, DDT, PCB, PAH
SS06 (Area C)	1.43	Cu 0.34, Hg 0.85, Sb 0.24	1.39	Dieldrin, DDT, PCB, PAH
SS15 (Area C)	No COPECs	NA	1.03	Dieldrin, DDT, PCB, PAH
SS07 (Area D)	1.18	Cu 0.26, Hg 0.92	1.42	Dieldrin, DDT, PCB, PAH

Notes:

Selenium was screened against the YBI background level and the TI fill ambient level per the recommendation by DTSC's ecological toxicologist.

Sample locations are shown on Figure 5.

_2	0-2 foot depth interval.
COPEC	Chemical of potential ecological concern
Cu	Copper
DDT	Total Dichlorodiphenyltrichloroethane
DTSC	Department of Toxic Substances
ER-M	Effects range – median
Hg	Mercury
NA	Not Applicable
Ni	Nickel
PAH	Total Polycyclic aromatic hydrocarbons
Pb	Lead
PCB	Total polychlorinated biphenyls
Sb	Antimony
Se	Selenium
TI	Treasure Island
YBI	Yerba Buena Island
Zn	Zinc

TABLE 10: OFFSHORE SEDIMENTS RISK CHARACTERIZATION SUMMARY[a]

Site 13 ROD, NAVSTA TI, San Francisco, California

Area	Risk Characterization Data Summary
Area A	**Risk to Benthic Invertebrates** • Detected concentrations of most chemicals were below or near SF Bay ambient concentrations or the ER-L. The only location for which chemical concentrations exceeded the ER-M was A6; total PCBs and zinc exceeded the ER-M at this location. The potential for adverse effects at location A6 was considered unlikely because total PCBs were elevated above the ER-M in only one subsurface sediment sample, where exposure is limited (deeper than 2 feet, considered an incomplete exposure pathway). Zinc, while above the ER-M in the 0 to 2 foot depth interval, was well below SF Bay ambient concentration in a surface grab sample collected at the same location. • Pore water HIs were above 1.0 at locations A6, A8, and A10 and ranged from 14 to 36; 4,4'-DDT was the main contributor. The 4,4'-DDT pore water concentrations were very close to the detection limit. Given a pore water 4,4'-DDT concentration of 0.02 ppb (Schweitzer 1998), the sediment 4,4'-DDT concentration would be about 2 ppb, which is less than the SF Bay ambient concentration. None of the sediments in Area A exceeded the SF Bay ambient concentration for 4,4'-DDT. • Amphipod survival ranged from 64 to 90 percent, and was greater than or equal to the benchmark of 68 percent at all but two locations. Survival at all locations was well above that of the Paradise Cove reference site. Based on studies conducted by the Navy's SWG, the original laboratory method imposed undo stress by rapid acclimation to salinity changes and reduced holding times before experimentation resulted in reduced survival. The SWG concluded, after further bioassay experiments, that slower rates of salinity acclimation and longer holding times before sediment testing increased the survival rate of *Eohaustorius estuarius* by approximately 18 percent. • Pore water bioassays using the echinoderm also indicated no adverse effects **Risk to Avian Receptors** Food chain analysis was not conducted for Area A. The riprap shoreline provides little shallow-water habitat. Thus, the risk to shorebirds from direct or indirect exposure to Area A sediments is limited and is not considered a complete exposure pathway. **Risk Assessment Conclusions for Area A** Incremental risk to benthic invertebrate receptors from exposure to sediments in Area A is considered acceptable. There is limited exposure to Area A sediments by avian receptors due to the riprap shoreline. No further investigation or action is necessary for Area A.
Area B	**Risk to Benthic Invertebrates** • Sediment concentrations of nickel exceeded the ER-M at B10, but were only slightly greater than the SF Bay ambient concentration. The screening value for selenium was slightly exceeded at locations B8 and B11; however the maximum concentration (1.4 mg/kg) was less than the maximum concentration of selenium in the YBI background soil dataset (1.5 mg/kg) and was only slightly greater than the maximum concentration in the data set for TI ambient for artificial fill (1.2 mg/kg). Endrin was detected above the ER-L but was well below the ER-M. • In pore water, HIs ranged from 0 to 60. The maximum HI was due to the contribution of mercury at location B8; mercury in the sediment at the same location was slightly elevated above the SF Bay ambient concentration, but was below the Paradise Cove reference site maximum and the ER-M.

TABLE 10: OFFSHORE SEDIMENTS RISK CHARACTERIZATION SUMMARY[a] (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Area	Risk Characterization Data Summary
Area B (Cont'd)	**Risk to Benthic Invertebrates (Cont'd)** • Amphipod survival was greater than or equal to the benchmark of 68 percent at locations B2, B5, and B7. Amphipod survival was less than the benchmark at locations B4, B8, and B10. As discussed in Area A, amphipod survival was likely reduced by about 18 percent due to induced stress due to rapid acclimation to salinity conditions and reduced holding times. Secondary stressors such as the high percentage of fines at locations B8 and B10 and levels of sediment ammonia, may have further contributed to a decrease in amphipod survival at those locations. With the exception of location B10, all bioassay results showed higher survival than the Paradise Cove reference site. • Polychaete growth and echinoderm pore water bioassays indicated no adverse effects to benthic invertebrates. **Risk to Avian Receptors** Food chain analysis was not conducted for Area B. The riprap shoreline provides little shallow-water habitat. Thus, the risk to shorebirds from direct or indirect exposure to Area B sediments is limited and is not considered a complete exposure pathway. **Risk Assessment Conclusions for Area B** Although selenium was elevated above screening values at two locations, concentrations were similar to YBI background and TI ambient soil concentrations. In pore water, HIs were elevated due to the contribution of mercury; however, mercury was not detected at elevated levels in sediment. Incremental risk to benthic invertebrate receptors from exposure to sediments in Area B is considered acceptable. There is limited exposure to Area B sediments by avian receptors due to the riprap shoreline. No further investigation or remedial action is necessary for Area B.
Area C	**Risk to Benthic Invertebrates** • The screening value for selenium was exceeded at four locations, C3, C4, C9, and C12; however, the maximum concentration (2.1 mg/kg) was only slightly greater than the maximum concentrations of selenium in the YBI background soil and TI ambient for artificial fill (1.5 mg/kg and 1.2 mg/kg, respectively). Nickel exceeded the ER-M at location C5, but was only slightly above SF Bay ambient concentration. • In pore water, HIs ranged from 0 to 25. The maximum HI was due to the contribution of copper; which was not elevated in sediment samples collected from the same location. • Amphipod survival was less than the benchmark of 68 percent at locations C3, C6, C7, C8, C11, and C13. However, as discussed in Area A, the lower survival rate was attributed to induced stress from rapid acclimation to salinity changes, reduced holding time before experimentation, and fine grained sediments. The Navy's SWG conducted an independent bioassay at location C7 where the lowest survival was observed (41 percent survival). When the organisms were properly acclimated to salinity changes and holding times were increased, survival increased to 77 percent, which is above the 68 percent benchmark. Additionally, with the exception of C13, fines neared 100 percent at every location. Low percent survival was also observed in the Paradise Cove reference area where fines were near 100. In a study on the effect of sediment grain size on amphipod survival, Gunther and others (1997) found that survival was inversely correlated with percent fines. Sampling location C13 is located about 1,600 feet offshore of NAVSTA TI, thus regional effects from baywide sediments, are predominant and no COPECs were identified at this location. • The echinoderm bioassay results for Area C did not indicate toxicity

TABLE 10: OFFSHORE SEDIMENTS RISK CHARACTERIZATION SUMMARY[a] (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Area	Risk Characterization Data Summary
Area C (Cont'd)	**Risk to Avian Receptors** A range of HQs were calculated to represent "very conservative" to "less conservative" estimates of risk. A HQ_1 represented the least conservative estimate. A $HQ_1 > 1.0$ indicates unacceptable risk. HQ_2 represented the most conservative estimate of risk. HQ_3 is between the HQ_1 and HQ_2. A HQ_3 less than 5.0 was considered acceptable risk. • No immediate or significant risk to the double-crested cormorant, willet, or peregrine from any chemical in Area C (all HQ_1s were less than 1.0) • Potential ($HQ_2 > 1.0$) but not probable ($HQ_3 < 1.0$) risk to the cormorant from copper, lead, mercury, and zinc • Potential ($HQ_2 > 1.0$) but not probable ($HQ_3 < 1.0$) risk to the willet from copper and nickel • Potential but not probable risk ($HQ_2 > 1$ and $HQ_3 < 2$) to the peregrine from copper, lead, mercury, nickel, zinc, and total DDT (based on 10 percent assimilation trophic transfer from willet prey to a willet body burden). • Potential and probable risk ($HQ_2 > 1$ and $HQ_3 = 3.6$) to the peregrine from selenium; however, sediment concentrations of selenium were not substantially elevated above ambient soil concentrations for TI and YBI **Risk Assessment Conclusions for Area C** Concentrations of selenium at locations C3, C4, C9, and C12, although greater than screening values, are not substantially greater than TI and YBI ambient soil levels. Incremental risk to benthic invertebrate receptors from exposure to sediments in Area C is considered acceptable. The results of the food chain model indicated an acceptable risk to avian receptors resulting from exposure to Area C sediments or prey. HQ_1s are all less than 1 and HQ_3s are all less than 5. No further investigation or remedial action is necessary for Area C
Area D	**Risk to Benthic Invertebrates** • With the exception of mercury at location D6 and nickel at locations D2 and D3, no ER-Ms were exceeded in Area D. Nickel was only slightly elevated above SF Bay ambient concentration. The concentration of mercury at location D6 was equal to the ER-M • Pore water HIs ranged from 0 to 22. The maximum HI was due to the contribution of copper; which did not exceed SF Bay ambient concentration in the surface sediment sample collected from the same location. Organic HIs were less than 4. The sole contributor to pore water HIs was endosulfan sulfate, which was not detected in sediment. • Amphipod survival was less than the benchmark of 68 percent at locations D1, D4, D6, and D9. As discussed in Area A, the lower survival rate was attributed to induced stress from rapid acclimation to salinity changes, reduced holding time before experimentation, and fine grained sediments. At each of these locations, greater than 93 percent fines was observed. Similar percent fines were measured in the reference area where survival was also low. An independent test conducted by the Navy's SWG at location D6 where the 39 percent survival was observed during the Site 13 investigations, resulted in 75 percent survival when the organisms were properly acclimated to salinity changes and holding times were increased. • Pore water bioassay results were available only for location D1. The EC_{50} at this location was 100 percent, indicating no toxicity.

TABLE 10: OFFSHORE SEDIMENTS RISK CHARACTERIZATION SUMMARY[a] (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Area	Risk Characterization Data Summary
Area D (Cont'd)	**Risk to Avian Receptors** A range of HQs were calculated to represent "very conservative" to "less conservative" estimates of risk. A HQ_1 represented the least conservative estimate. A $HQ_1 > 1.0$ indicates unacceptable risk. HQ_2 represented the most conservative estimate of risk. HQ_3 is between the HQ_1 and HQ_2. A HQ_3 less than 5.0 was considered acceptable risk. • No immediate or significant risk to the double-crested cormorant, willet, or peregrine from any chemical in Area D (all HQ_1s were less than 1.0). • Potential ($HQ_2 > 1.0$) but not probable ($HQ_3 < 1.0$) risk to the cormorant from copper, mercury, and zinc. • Potential ($HQ_2 > 1.0$) but not probable ($HQ_3 < 1.0$) risk to the willet from copper, lead, and nickel. • Potential but not probable risk ($HQ_2 > 1$ and $HQ_3 < 2$) to the peregrine from copper, lead, and mercury (based on 10 percent assimilation trophic transfer from willet prey to a willet body burden). • Potential and probable risk ($HQ_2 > 1$ and $HQ_3 = 3.1$) to the peregrine from selenium; however, sediment concentrations of selenium were not substantially elevated above ambient soil concentrations for TI and YBI. **Risk Assessment Conclusions for Area D** Although the evaluation of the chemical and toxicity data indicated limited risk to benthic invertebrate receptors from exposure to mercury and nickel in the sediment at Area D, the incremental risk is considered acceptable. The results of the food chain model indicated an acceptable risk to avian receptors from exposure to sediments or prey in Area D. HQ_1s are all less than 1 and HQ_3s are all less than 5. No further investigation or remedial action is necessary for Area D.
Area E and IR Site 11 Beach Samples	**Risk to Benthic Invertebrates** • Chemicals for which ER-Ms were exceeded in Area E included mercury at location E9 and nickel in subsurface sediments at location E3. Nickel was only slightly elevated in subsurface sediments where exposure is limited (deeper than 2 feet, considered an incomplete exposure pathway). The screening value for selenium was exceeded at locations E2 and E3, but the concentrations were similar to TI and YBI ambient soil concentrations. • Pore water HIs ranged from 0 to 19. The maximum HI was due to the contribution of mercury, which was not elevated above SF Bay ambient concentration in the sediment sample collected from the same location. Organic HIs only exceeded 1.0 at location E2. The HI of 11.0 at location E2 was due to the contribution of DDT, which was not detected in sediment collected from the same location. • Amphipod survival was less than the benchmark of 68 percent at locations E1, E3, E5, and E9. An independent test conducted by the Navy's SWG at location E9 where the 32 percent survival was observed during the Site 13 investigations, resulted in 82 percent survival when the organisms were properly acclimated to salinity changes and holding times were increased. Percent fines ranged from 60 to 85, and may have acted as a secondary stressor, further contributing to amphipod mortality. • Pore water bioassay results for locations E3 and E7 had EC_{50}s of 79 and 100 percent, respectively, indicating no significant toxicity. Polychaete growth and survival also indicated no adverse effects to benthic invertebrates. • The IR Site 11 Landfill Beach investigation area was adjacent to Area E along the shoreline. Results from this sampling event showed that PCBs were at concentrations below the ER-M and, concentrations of TPH extractables were below both TPH action levels and below the TI residential screening criterion for soil.

TABLE 10: OFFSHORE SEDIMENTS RISK CHARACTERIZATION SUMMARY[a] (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Area	Risk Characterization Data Summary
Area E and IR Site 11 Beach Samples (Cont'd)	**Risk to Avian Receptors** A range of HQs were calculated to represent "very conservative" to "less conservative" estimates of risk. A HQ_1 represented the least conservative estimate. A $HQ_1 > 1.0$ indicates unacceptable risk. HQ_2 represented the most conservative estimate of risk. HQ_3 is between the HQ_1 and HQ_2. A HQ_3 less than 5.0 was considered acceptable risk. • No immediate or significant risk to the double-crested cormorant, willet, or peregrine from any chemical in Area E (all HQ_1s were less than 1.0). • Potential ($HQ_2 > 1.0$) but not probable ($HQ_3 < 1.0$) risk to the cormorant from copper, lead, and zinc. • Potential ($HQ_2 > 1.0$) but not probable ($HQ_3 < 1.0$) risk to the willet from copper and lead. • Potential but not probable risk ($HQ_2 > 1$ and $HQ_3 < 2$) to the peregrine from copper, manganese, mercury, selenium, and zinc (based on 10 percent assimilation trophic transfer from willet prey to a willet body burden). • Potential and probable risk ($HQ_2 > 1$ and $HQ_3 = 4.15$) to the peregrine from lead; however, HQs calculated using the refined dose model for the peregrine, which was based on more realistic exposure parameters, were all less than 1.0. **Risk Assessment Conclusions for Area E** Although the evaluation of the chemical and toxicity data indicated limited risk to benthic invertebrate receptors from exposure to mercury in the sediment at one location in Area E, this risk is considered acceptable. Concentrations of selenium in sediment at locations E2 and E3 are similar to YBI background and TI ambient soil concentrations. Incremental risk to benthic invertebrate receptors from exposure to sediments in Area E is considered acceptable. The results of the food chain model indicate an acceptable risk to avian receptors. HQ_1s are all less than 1 and HQ_3s are all less than 5. No further investigation or remedial action is deemed necessary for Area E and the intertidal area at IR Site 11.
Area G and IR Site 12 OA	**Risk to Benthic Invertebrates** • The only location for which inorganic chemical concentrations exceeded screening values was G7; selenium exceeded screening values, but did not exceed TI ambient or YBI background soils concentrations. Concentrations of 4-4'-DDT exceeded the ER-M at locations G2, G15, and G17; however, the ER-M for total DDT was not exceeded at any of these locations. • In pore water, the only inorganic HI greater than 1.0 was for location G4 (HI = 5.4) due to the contribution of mercury. Mercury concentration in sediment at location G4 was well below SF Bay ambient concentration. Organic HIs, due to the contribution of 4,4'-DDT, ranged from 12 to 88 at locations G9, G20, and G21. Given a pore water 4,4'-DDT concentration of 0.02 ppb, the sediment 4,4'-DDT concentration could be approximately 2 ppb (Schweitzer 1998), which is less than SF Bay ambient concentration. 4,4'-DDT was not detected in sediment at these locations and the 4,4'-DDT pore water concentrations were very close to the detection limit. • Amphipod survival was greater than the benchmark of 68 percent at all but three locations. Survival at all locations was well above that of the Paradise Cove reference site. Amphipod survival was probably reduced by about 18 percent due to induced stress from rapid acclimation to salinity conditions and reduced holding times as discussed above. • Pore water bioassays using the echinoderm indicated no adverse effects.

TABLE 10: OFFSHORE SEDIMENTS RISK CHARACTERIZATION SUMMARY[a] (CONTINUED)
Site 13 ROD, NAVSTA TI, San Francisco, California

Area	Risk Characterization Data Summary
Area G and IR Site 12 OA (Cont'd)	**Risk to Benthic Invertebrates (Cont'd)** • The IR Site 12 OA investigation area is contained within Area G. The results of the Site 12 OA investigation found that inorganic chemical concentrations in sediment in the IR Site 12 OA were similar to concentrations detected in samples collected in Area G in 1996. The results of both investigations showed concentrations slightly elevated above ER-Ls and SF Bay ambient concentrations; no ER-Ms were exceeded. The results of the Site 12 OA investigation determined there was an acceptable minimal risk to aquatic receptors. No onshore debris was found in the IR Site 12 OA. **Risk to Avian Receptors** Food chain analysis was not conducted for Area G. The riprap shoreline provides little shallow-water habitat. Thus, the risk to shorebirds from direct or indirect exposure to Area G sediments is limited and is not considered a complete exposure pathway. **Risk Assessment Conclusions for Area G** Incremental risk to benthic invertebrate receptors from exposure to sediments in Area G is considered acceptable. There is limited exposure to Area G sediments by avian receptors due to the riprap shoreline. No further investigation or remedial action is necessary for Area G. Although metals and PCBs were detected in the sediments at the IR Site 12 Offshore Area, concentrations were not elevated above the screening criteria. No further investigation or remedial action is necessary for the area directly northeast of onshore IR Site 12.

Notes:

Selenium was screened against the YBI background level and the TI fill ambient level per the recommendation by DTSC's ecological toxicologist.

At the request of the Water Board, the Navy collected sediment and bioassay samples at Paradise Cove in the SF Bay area to use as a reference data set.

a Data presented in this table summarize the results of the risk characterization from the final Remedial Investigation Report for the Offshore Sediments at NAVSTA TI (Tetra Tech 2001).

COPEC	Chemicals of potential ecological concern	NAVSTA TI	Naval Station Treasure Island
DDT	Dichlorodiphenyltrichorethane	Navy	U.S. Department of the Navy
DTSC	Department of Toxic Substances Control	OA	Offshore area
EC_{50}	Effects concentration for 50 percent survival	PCB	Polychlorinated biphenyl
ER-L	Effects Range – Low (Long and others 1995)	ppb	Parts per billion
ER-M	Effects Range – Median (Long and others 1995)	ROD	Record of decision
HI	Hazard Index	SF Bay ambient	San Francisco Bay Ambient Concentrations (Water Board 1998)
HQ	Hazard Quotient		
HQ_1	$HQ_1 > 1$ = Significant immediate risk	SWG	Sediment Work Group
HQ_2	$HQ_2 > 1$ = Potential risk	Tetra Tech	Tetra Tech EM Inc.
HQ_3	$HQ_3 > 1$ = Probable risk	TI	Treasure Island
IR	Installation Restoration	TPH	Total Petroleum Hydrocarbons
mg/kg	Milligrams per kilogram	Water Board	Regional Water Quality Control Board
		YBI	Yerba Buena Island

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APPENDIX A
STATEMENT OF REASONS

STATEMENT OF REASONS FOR THE NO ACTION RECORD OF DECISION/REMEDIAL ACTION PLAN SITE 13 RECORD OF DECISION NAVAL STATION TREASURE ISLAND

Pursuant to California Health and Safety Code (HSC) Section 25356.1, the Navy has prepared this Statement of Reasons as part of the Record of Decision/Remedial Action Plan (ROD/RAP) for the Installation Restoration Site 13, Naval Station Treasure Island, San Francisco, California.

This ROD/RAP presents a summary of the environmental investigations conducted at the site. This decision document selects no action for this site. No action is necessary to protect human health or the environment at the site. The investigation concluded that the chemicals detected in offshore sediments do not pose an unacceptable risk to human health or the environment.

The attached ROD/RAP complies with the law as specified in HSC Section 25356.1. Section 25356.1(e) requires that RAPs "shall include a statement of reasons setting forth the basis for the removal and remedial actions selected." The statement of reasons "shall also include an evaluation of the consistency of the removal and remedial actions proposed by the plan with the federal regulations and factors specified in subdivision (d)..." Subdivision (d) specifies six factors against which the remedial alternatives in the RAP must be evaluated. The proposed remedial action is consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (the National Contingency Plan, "NCP"), the federal Superfund regulations. The attached ROD/RAP has addressed all these factors in detail. A brief summary of each factor follows. The statement of reasons also includes the preliminary Nonbinding Allocation of Responsibility (NBAR) as required by HSC Section 25356.1(e).

1. HEALTH AND SAFETY RISKS – SECTION 25356.1(D)(1)

The chemicals of ecological concern for Site 13 are: antimony, arsenic, copper, lead, mercury, nickel, selenium, zinc, 4,4'-dichlorodiphenyldichloroethane, 4,4'-dichlorodiphenylchloroethylene, 4,4'-DDT, Total DDTs, dieldrin, endrin, endosulfan sulfate, heptachlor, heptachlor epoxide, Total PCBs, Total PAHs, tetrabutyltin, and tributyltin. There are no chemicals of concern for human health because the offshore sediments at Site 13 are submerged and there is minimal shoreline exposure that would enable humans to come into direct contact with the sediment.

The ecological risk assessment evaluated the risk to receptors residing in or migrating through the offshore habitat at Site 13 that may be exposed to site related chemicals in surface waters, sediments, and ground water, as well as the ingestion of organic material by offshore receptors. Based on an evaluation of the chemical and toxicity data, incremental risk to benthic invertebrate receptors from exposure to NAVSTA TI offshore sediments was considered minimal. Potential risk to avian receptors was evaluated using food-chain modeling. The primary route of exposure to chemicals in sediments was direct ingestion of food and incidental ingestion of sediment. Potential effects to avian receptors were evaluated based on the Hazard Quotient (HQ) approach. Based on the results of the food-chain modeling combined with sediment concentrations below or slightly above ambient levels, acceptable risk to avian receptors was indicated. The sediments

at Site 13 do not pose an unacceptable risk to human health or the environment. No remedial action is necessary for the sediments at Site 13.

2. BENEFICIAL USES OF THE SITE RESOURCES – SECTION 25356.1(D)(2)

Site 13 consists of the offshore sediments surrounding NAVSTA TI. Site 13 consists of five parcels which are to be transferred or reassigned to three separate entities. The Submerged Land parcel (S-1) and the Marina Parcel (S-2) are scheduled for transfer to the City and County of San Francisco. The Submerged Parcel (S-3, -4, -5, and -6) and the FHA Submerged Land parcel (S-8 and S-9) are reversionary and will be transferred back to the state of California. The submerged parcel (S-7) contiguous with the southern portion of Yerba Buena Island was previously reassigned to the United States Coast Guard.

The two parcels planned for transfer to the City and County of San Francisco will be subject to the tidelands trust that restricts uses to maritime issues. No specific uses for the S-1 parcel have been identified other than continued use of an existing fishing pier. Two future uses have been identified for S-2 in the City's application for the property and preliminary development plans. S-2 currently contains a 108-slip marine and Pier 1 which was used for docking naval vessels. Future plans include expanding the marina to 403 slips and converting the pier to a ferry terminal.

The two reversionary (S-8 and S-9) parcels will also be subject to the tidelands trust. No future uses are identified for the reassigned submerged parcel S-7; however, a temporary construction easement was granted to CALTRANS to facilitate activities associated with the construction of the new east span of the Oakland-Bay Bridge.

3. EFFECT OF THE REMEDIAL ACTIONS OF GROUNDWATER RESOURCES – SECTION 25356.1 (D)(3)

Site 13 consists only of submerged parcels. Groundwater resources are not affected.

4. SITE-SPECIFIC CHARACTERISTICS – SECTION 25356.1(D)(4)

Sediment, stormwater and porewater samples have been collected during offshore sampling events between 1993 and 2000. Potential pathways for chemical mobilization and transport were included in the ecological risk assessment. Each parcel within Site 13 was assessed to determine the nature and extent of any chemicals present, evaluate potential risks posed by chemicals present, and consider and evaluate whether it was necessary to address any chemical concentrations found. Based on the ERA performed, it was determined that the risks to human health and the environment were minimal and no action was required.

5. COST-EFFECTIVENESS OF ALTERNATIVE REMEDIAL ACTION MEASURES – SECTION 25356.1(D)(5)

Based on the evaluation of existing data, the Navy has determined that no further action is necessary to ensure the protection of human health and the environment. The proposed no further action is cost-effective and protective of human health and the environment.

6. POTENTIAL ENVIRONMENTAL IMPACTS OF REMEDIAL ACTIONS – SECTION 25356.1 (D)(6)

Since this is a no action ROD/RAP, there is no remedial action and therefore no adverse impacts as a result of any remedial action.

7. PRELIMINARY NONBINDING ALLOCATION OF FINANCIAL RESPONSIBILITY – SECTION 25356.1(E)

A ROD/RAP must include a "nonbonding preliminary allocation of responsibility (NBAR) among all identifiable potentially responsible parties at a particular site, including those parties which may have been released, or may otherwise be immune, from liability." (HSC Section 25356.1[e]). The Navy is responsible for problems associated with contamination resulting solely from the Navy's activities at IRP Site 13, Naval Station Treasure Island.

The current NBAR for Site 13, as issued by DTSC, is presented below.

PRELIMINARY NONBINDING ALLOCATION OF RESPONSIBILITY

Health and Safety Code (HSC) Section 25356.1(e) requires that Department of Toxic Substances Control (DTSC) to prepare a preliminary nonbonding allocation of responsibility (the "NBAR") among all identifiable potentially responsible parties (PRPs). HSC Section 25356.3(a) allows PRPs with an aggregate allocation in excess of 50% to convene an arbitration proceeding by submitting to binding arbitration before an arbitration panel. If PRPs with over 50% of the allocation convene arbitration, then any other PRP wishing to do so may also submit to binding arbitration.

The sole purpose of the NBAR is to establish which PRPs will have an aggregate allocation in excess of 50% and can therefore convene an arbitration if they so choose. The NBAR, which is based on the evidence available to DTSC, is not binding on anyone, including PRPs, DTSC, or the arbitration panel. If a panel is convened, its proceedings are de novo and do not constitute a review of the provisional allocation. The arbitration panel's allocation will be based on the panel's application of the criteria spelled out in HSC Section 25356.3(c) to the evidence produced at the arbitration hearing. Once arbitration is convened, or waived, the NBAR has no further effect, in arbitration, litigation or any other proceeding, except that both the NBAR and the arbitration panel's allocation are admissible in a court of law, pursuant to HSC Section 25356.7 for the sole purpose of showing the good faith of the parties who have discharged the arbitration panel's decision.

DTSC sets forth the following preliminary nonbonding allocation of responsibility for Site 13:

> The U.S. Department of the Navy is responsible for activities related to the Navy's practices during the Navy's use of Site 13 at NAVSTA TI. The U.S. Department of the Navy is not responsible for contamination that has moved onto Site 13 via sediment or groundwater transport from sources off of NAVSTA TI.

APPENDIX B
ADMINISTRATIVE RECORD INDEX

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N60028 / 000148	11-29-1999 **10-07-1992**	NAVY	REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) MAP OF TREASURE ISLAND AND YERBA BUENA ISLAND STORMWATER	ADMIN RECORD	FS RI	013	P3-C - BECHTEL NATIONAL
LTR NONE 00000	NONE 00.0	BAAQMD	OUTFALLS AND SAMPLING. ***COMMENTS: OUTFALLS***		STORMWATER		PW - 28825507
N60028 / 000225	11-29-1999 **11-24-1992**	NAVY	IMPLEMENTATION OF VARIANCE TO FIELD SAMPLING PLAN (FSP) SEDIMENT SAMPLING	ADMIN RECORD	FSP	013	P3-C - BECHTEL NATIONAL
LTR NONE 00000	NONE 00.0						PW - 28825508
N60028 / 000226	11-29-1999 **11-24-1992**	NAVY	IMPLEMENTATION OF VARIANCE TO FIELD SAMPLING PLAN (FSP) STORM WATER SAMPLING	ADMIN RECORD	FSP	013	P3-C - BECHTEL NATIONAL
LTR NONE 00000	NONE 00.0						PW - 28825508
N60028 / 000507	11-29-1999 **12-15-1995**	RAB HEHN, PAUL V.	COMMENTS ON DRAFT FINAL PHASE II ECOLOGICAL RISK ASSESSMENT (ERA) WORK PLAN FROM TECHNICAL	ADMIN RECORD	ERA WP	013 027	P3-C - BECHTEL NATIONAL
CMNT NONE 00021	NONE 00.0	NAVY SULLIVAN, JAMES	SUBCOMMITTEE MEETING - 12 DECEMBER 1995				PW - 28825515
N60028 / 000511	11-29-1999 **05-07-1996**	PRC TOBIAS, SHARON L	REVISED COVER PAGE FOR PHASE II ECOLOGICAL RISK ASSESSMENT (ERA) FINAL WORK PLAN AND FIELD SAMPLING	ADMIN RECORD	ERA FSP	013 027	P3-C - BECHTEL NATIONAL
RPT N62474-88-D-5086 00002	00199 00.0	L NAVY GALANG, ERNESTO	PLAN (FSP) SUBMITTED 12 APRIL 1996		WP		PW - 28825515

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N60028 / 000540	11-29-1999 **06-28-1996**	PRC TOBIAS, SHARON L	PHASE II ECOLOGICAL RISK ASSESSMENT (ERA), DRAFT FINAL QUALITY ASSURANCE PROJECT PLAN (QAPP)	INFO REPOSITORY	ERA QAPP	013 027	P3-C - BECHTEL NATIONAL
RPT N62474-88-D-5086 00246	00199 00.0	L NAVY GALANG, ERNESTO					PW - 28825516
N60028 / 000539	11-29-1999 **07-10-1996**	NAVY GALANG, ERNESTO	SUBMISSION OF PHASE II ECOLOGICAL RISK ASSESSMENT (ERA), DRAFT FINAL QUALITY ASSURANCE PROJECT PLAN (QAPP) - 28 JUNE 1996	INFO REPOSITORY	ERA QAPP	013 027	P3-C - BECHTEL NATIONAL
LTR N62474-88-D-5086 00002	00199 00.0	ERNESTO DTSC KAO, CHEIN PING			WP		PW - 28825516
N60028 / 000672	11-29-1999 **04-03-1997**	NAVY GALANG, ERNESTO	PHASE II ECOLOGICAL RISK ASSESSMENT (ERA); MEETING MINUTES, FIELD SAMPLING PLAN (FSP) UPDATE MEETING, OFFSHORE SAMPLING - 21 FEBRUARY 1997	INFO REPOSITORY	ERA FSP		P3-C - BECHTEL NATIONAL
LTR NONE 00017	NONE 00.0	ERNESTO DTSC CASSA, MARY ROSE					PW - 28825519
N60028 / 000867	11-29-1999 **06-01-1998**	NAVY GALANG, ERNESTO	SUBMISSION OF THE DRAFT REMEDIAL INVESTIGATION (RI), OFFSHORE SEDIMENTS OPERABLE UNIT (OU), VOLUMES 1 AND 2 - 01 JUNE 1998	ADMIN RECORD	OU RI	013 027	P3-C - BECHTEL NATIONAL
LTR N62474-94-D-7609 00002	00194 00.0	ERNESTO DTSC RIST, DAVID			SEDIMENT	OFFSHORE O	PW - 28825525
N60028 / 000868	11-29-1999 **06-01-1998**	TETRA TECH ROSE, CINDI	DRAFT REMEDIAL INVESTIGATION (RI), OFFSHORE SEDIMENTS OPERABLE UNIT (OU), VOLUME 1 OF 2 - TEXT, TABLES, AND FIGURES	ADMIN RECORD	OU RI	013 027	P3-C - BECHTEL NATIONAL
RPT N62474-94-D-7609 01000	00194 00.0	NAVY GALANG, ERNESTO			SEDIMENT	OFFSHORE O	PW - 28825525

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N60028 / 000869	11-29-1999 **06-01-1998**	TETRA TECH ROSE, CINDI	DRAFT REMEDIAL INVESTIGATION (RI), OFFSHORE SEDIMENTS OPERABLE UNIT (OU), VOLUME 2 OF 2 - APPENDICES	ADMIN RECORD	OU RI	013 027	P3-C - BECHTEL NATIONAL
RPT N62474-94-D-7609 01000	00194 00.0	NAVY GALANG, ERNESTO			SEDIMENT	OFFSHORE O	PW - 28825525
N60028 / 000865	11-29-1999 **07-20-1998**	NAVY GALANG, ERNESTO	SUBMISSION OF TECHNICAL MEMORANDUM (TM), REMEDIAL INVESTIGATION (RI) OFFSHORE SEDIMENTS OPERABLE UNIT	ADMIN RECORD	OU RI		P3-C - BECHTEL NATIONAL
LTR N62474-94-D-7609 00002 00002	00194 00.0	ERNESTO DTSC RIST, DAVID	(OU) INVERTEBRATE AND FISH TISSUE COLLECTION RATIONALE AND M		SEDIMENT TISSUE TM		PW - 28825525
N60028 / 000869	11-29-1999 **06-01-1998**	TETRA TECH ROSE, CINDI	DRAFT REMEDIAL INVESTIGATION (RI), OFFSHORE SEDIMENTS OPERABLE UNIT (OU), VOLUME 2 OF 2 - APPENDICES	ADMIN RECORD	OU RI	013 027	P3-C - BECHTEL NATIONAL
RPT N62474-94-D-7609 01000	00194 00.0	NAVY GALANG, ERNESTO			SEDIMENT	OFFSHORE O	PW - 28825525
N60028 / 000927	11-29-1999 **07-20-1998**	MEC	TECHNICAL REVIEW OF THE DRAFT CONTRACT REPORT ENTITLED, "COMPREHENSIVE LONG-TERM	ADMIN RECORD	CLEAN II OU	013 027	P3-C - BECHTEL NATIONAL
CMNT NONE 00021	NONE 00.0	SFRA	ENVIRONMENTAL ACTION NAVY (CLEAN II) REMEDIAL INVESTIGATION OFFSHORE SEDIMENTS O		RI SEDIMENT	OFFSHORE O	PW - 28825526
N60028 / 000898	11-29-1999 **08-06-1998**	RAB BRENNAN,	COMMENTS ON THE OFFSHORE REMEDIAL INVESTIGATION (RI) REPORT	ADMIN RECORD	RI	013 027	P3-C - BECHTEL NATIONAL
CMNT NONE 00008	NONE 00.0	NATHAN NAVY SULLIVAN, JAMES				OFFSHORE O	PW - 28825526

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N60028 / 000978 RPT N62474-94-D-7609 02000	11-29-1999 **03-19-1999** 00194 00.0	TETRA TECH ROSE, CINDI NAVY GALANG, ERNESTO	DRAFT FINAL REMEDIAL INVESTIGATION (RI) OFFSHORE SEDIMENTS OPERABLE UNIT (OU), VOLUME 1 OF 2, TEXT, TABLES, AND FIGURES	INFO REPOSITORY	OFFSHORE OU RI SEDIMENTS	013 027 OFFSHORE O	P3-C - BECHTEL NATIONAL PW - 28825528
N60028 / 000979 RPT N62474-94-D-7609 02000	11-29-1999 **03-19-1999** 00194 00.0	TETRA TECH ROSE, CINDI NAVY GALANG, ERNESTO	DRAFT FINAL REMEDIAL INVESTIGATION (RI) OFFSHORE SEDIMENTS OPERABLE UNIT (OU), VOLUME 2 OF 2, APPENDICES	INFO REPOSITORY	OFFSHORE OU RI SEDIMENTS	013 027 OFFSHORE O	P3-C - BECHTEL NATIONAL PW - 28825528
N60028 / 000995 CMNT NONE 00003	11-29-1999 **04-22-1999** NONE 00.0	MEC KRAUSE, PAUL NAVY GALANG, ERNESTO	COMMENTS ON THE DRAFT FINAL REMEDIAL INVESTIGATION (RI) OFFSHORE SEDIMENTS OPERABLE UNIT (OU)	ADMIN RECORD	OFFSHORE OU RI SEDIMENTS	013 027 OFFSHORE O	P3-C - BECHTEL NATIONAL PW - 28825528
N60028 / 001006 CMNT NONE 00005	11-29-1999 **05-11-1999** NONE 00.0	DTSC RIST, DAVID NAVY GALANG, ERNESTO	COMMENTS ON THE DRAFT FINAL OFFSHORE SEDIMENTS OPERABLE UNIT *REMEDIAL INVESTIGATION (OU/RI) REPORT* - 19 MARCH 1999	ADMIN RECORD	OFFSHORE OU RI SEDIMENT	013 027 OFFSHORE O	P3-C - BECHTEL NATIONAL PW - 28825529
N60028 / 001017 CMNT NONE 00002	11-29-1999 **05-24-1999** NONE 00.0	RWQCB LELAND, DAVID F. NAVY GALANG, ERNESTO	COMMENTS ON THE DRAFT FINAL REMEDIAL INVESTIGATION (RI) OFFSHORE SEDIMENTS OPERABLE UNIT (OU) REPORT - 19 MARCH 1999	ADMIN RECORD	OFFSHORE OU RI SEDIMENT	013 027 OFFSHORE O	P3-C - BECHTEL NATIONAL PW - 28825529

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N60028 / 001107 SWDIV SER 6225EG/L0034-3 6225EG/L0034-3 MM MM NONE 00030	03-31-2000 **02-03-2000** NONE	NAVFAC - SOUTHWEST DIVISION E. GALANG VARIOUS VARIOUS	REMEDIAL PROJECT MANAGER AND BRAC CLEANUP TEAM (RPM/BCT) MEETING MINUTES - 14 DECEMBER 1999: FINAL - STRATEGIC PLANNING SESSION 1 (INCLUDES 4 ATTACHMENTS: AGENDA, SIGN-IN SHEET, VARIOUS HANDOUTS)	ADMIN RECORD	FFSRA RAP ROD	001 003 004 005 006 006B 007 008 009 009B 010 011 011B 012 012B 013 014 014B 015 015B 016 017 017A 019 020 020B 021 021B 021C 022 022B 024 024B 025 025B	P3-C - BECHTEL NATIONAL PW - 80462409 PW - 80462409

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						027 028 029 A BLDG. 1133 BLDG. 1205 BLDG. 1207 BLDG. 1209 BLDG. 1231 BLDG. 1232 BLDG. 1233 BLDG. 1244 BLDG. 1251 BLDG. 1253	
N60028 / 001119 SWDIV SER 6225EG/L0088-1 6225EG/L0088-1 MM MM NONE 00040	05-03-2000 **03-28-2000** NONE	NAVFAC - SOUTHWEST DIVISION E. GALANG VARIOUS VARIOUS	TRANSMITTAL OF REMEDIAL PROJECT MANAGER (RPM)/BRAC CLOSURE TEAM (BCT) MEETING MINUTES OF 1 FEBRUARY AND 8 FEBRUARY 2000 RE: REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) (W/ENCLOSURES) (*SEE COMMENT FIELD BELOW). ***COMMENTS: * ITEMS IN THE SITE FIELD WITH "*" REPRESENT WELL NUMBERS***	ADMIN RECORD	FFSRA MTBE PAH QAPP SVOC TPH TPH-D TPH-E TPH-G TPH-MO VOC	001 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 019 020 021 022 024 025	SOUTHWEST DIVISION

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						025-MW02* 025-MW04* 027 028 029 143-MW1* 143-MW2* BLDG. 1127 BLDG. 1207 BLDG. 1313 BLDG. 1315 BLDG. 1317 BLDG. 1321 BLDG. 1323 BLDG. 1325 UST 227 UST 270	
N60028 / 000088 NONE MM MM NONE 00011	08-30-2000 **05-16-2000** NONE NONE	NAVFAC - SOUTHWEST DIVISION DIVISION NAVFAC - SOUTHWEST DIVISION	RESTORATION ADVISORY BOARD (RAB) MEETING MINUTES - 18 APRIL 2000 (MEETING NO. 66)	ADMIN RECORD INFO REPOSITORY REPOSITORY	FOST MTG MINS PCB RAB RI	012 013 027 027	P3-C - BECHTEL NATIONAL PW - 80462385 PW - 80462385
N60028 / 000109 NONE MM MM NONE 00070	11-08-2000 **05-16-2000** NONE NONE	MARY HILLABRAND, INC. S. BALBONI S. BALBONI NAVFAC - SOUTHWEST DIVISION	RESTORATION ADVISORY BOARD (RAB) MEETING TRANSCRIPT OF 16 MAY 2000 (MEETING NO. 67)	ADMIN RECORD INFO REPOSITORY REPOSITORY	GW METALS PAH PCB PESTICIDES RAB REMOVAL SVOC TPH VOC WELLS	011 012 013 013 021 027	P3-C - BECHTEL NATIONAL PW - 80462385

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N60028 / 001122 NONE MM MM NONE 00020 00020	06-21-2000 **06-20-2000** NONE	TETRA TECH EM INC. NAVFAC - SOUTHWEST DIVISION	RESTORATION ADVISORY BOARD (RAB) AGENDA FOR MEETING NO. 68 SCHEDULED FOR 20 JUNE 2000 AND RAB MEETING MINUTES OF 16 MAY 2000 (MEETING NO. 67) - (INCLUDES AGENDA, SIGN-IN SHEETS AND HANDOUTS)	ADMIN RECORD	PCB SVOC TPH VOC	011 012 013 021 027 BLDG. 1133 BLDG. 1207 BLDG. 1209	SOUTHWEST DIVISION
N60028 / 000113 TC.0308.10622 & SWDIV SER SWDIV SER 06CA.JS MM MM N62474-94-D-7609 00030	12-18-2000 **10-09-2000** 00308 00308	NAVFAC - SOUTHWEST DIVISION DIVISION J. SULLIVAN VARIOUS VARIOUS	FINAL - REMEDIAL PROJECT MANAGER AND BRAC CLEANUP TEAM (RPM/BCT) MEETING MINUTES - 13 AND 14 JUNE 2000 - INCLUDES AGENDA, SIGN-IN SHEET, SUMMARY OF SITES 13 & 27 AND COMPILATION OF ACTION ITEMS (WITH ATTACHMENTS). ***COMMENTS: *BCT MEETING MINUTES SUBMITTED BY TETRA TECH***	ADMIN RECORD INFO REPOSITORY REPOSITORY	FOST MTG MINS PAH PCB TPH VOC	001 003 004 004 005 006 007 008 009 010 011 012 013 014 015 016 017 019 020 021 022 024 025 027 028 029	P3-C - BECHTEL NATIONAL PW - 80462385 PW - 80462385

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UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location FRC Access. No. Box No. CD No.
N60028 / 000119 TC.0308.10767 & SWDIV SER SWDIV SER 06CA.JS/1041 MM N62474-94-D-7609 00090	01-11-2001 **12-20-2000** 00308 00308	TETRA TECH EM INC. VARIOUS AGENCIES	REMEDIAL PROJECT MANAGER AND BRAC CLEANUP TEAM (RPM/BCT) MEETING MINUTES - 14 NOVEMBER 2000 - INCLUDES AGENDA, SIGN-IN SHEET, & ACTION ITEM LIST (WITH ATTACHMENTS)	ADMIN RECORD INFO REPOSITORY	MTG MINS TPH	001 005 007 007 012 013 017 021 024 027 03	P3-C - BECHTEL NATIONAL PW - 80462385
N60028 / 000654 DS.0232.17065 & SWDIV SER SWDIV SER 06CA.JS/1354 RPT N62474-94-D-7609 01500	03-01-2002 **12-28-2001** 00232 00232	TETRA TECH EM INC. C. ROSE C. ROSE NAVFAC - SOUTHWEST DIVISION	FINAL REMEDIAL INVESTIGATION OFFSHORE SEDIMENTS OPERABLE UNIT - VOLUMES 1 AND 2 OF 2 INCLUDES ELECTRONIC VERSION OF APPENDICES, SWDIV TRANSMITTAL LETTER BY J. SULLIVAN AND SUMMARY OF CHANGES MADE BETWEEN DRAFT FINAL AND FINAL VERSION OF THIS REPORT	ADMIN RECORD INFO REPOSITORY REPOSITORY	DDD DDE LANDFILL PAH PCB PCE RI STORMWATER SVOC TBT TCE TOC TPH TPHE TPHP VOA VOC	013 027	P3-C - BECHTEL NATIONAL PW - 136772577

APPENDIX B: ADMINISTRATIVE RECORD INDEX (Continued)

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Treasure Island Documents Pertaining To Site 13, Site 27, and Offshore Area
Site 13 ROD, NAVSTA TI, San Francisco, California

UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location FRC Access. No. Box No. CD No.
N60028 / 000652 TC.0308.11322 & SWDIV SER SWDIV SER 06CA.JS/0021 MM MM N62474-94-D-7609 00100	03-01-2002 **01-08-2002** 00308 00308	NAVFAC - SOUTHWEST DIVISION DIVISION J. SULLIVAN VARIOUS VARIOUS AGENCIES	DRAFT MEETING MINUTES FROM THE REMEDIAL PROJECT MANAGERS AND BASE REALIGNMENT AND CLOSURE CLEANUP TEAM (RPM/BCT) FROM MEETING HELD ON 4 DECEMBER 2001 - INCLUDES SIGN-IN SHEET AND AGENDA AND HANDOUTS (WITH ATTACHMENTS). ***COMMENTS: *NOTE: MEETING MINUTES WERE SUBMITTED BY TETRA TECH***	ADMIN RECORD INFO REPOSITORY REPOSITORY	CAP COMMENTS DCE DVE EE/CA FSP GW LANDFILL MONITORING MTG MINS PAH PCB PCE QAPP RAB RI SOIL SVE TCE TCRA TPH UST VOC WELLS	001A 001E 002C 002C 004 006 007 011 012 013 014 015 019 020 021 022 024 025 027 029 201 368A 368B BLDG. 1100 BLDG. 1102 BLDG. 1104 BLDG. 1106 BLDG. 1246 BLDG. 1248 BLDG. 1252 BLDG. 1254 BLDG. 1311 BLDG. 1413 BLDG. 240 BLDG. 530 BLDG. 66 BLDG. 99	P3-C - BECHTEL NATIONAL PW - 136772577 PW - 136772577

APPENDIX B: ADMINISTRATIVE RECORD INDEX (Continued)

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UIC No. / Rec. No. Doc. Control No. Record Type Contr./Guid. No. Approx. # Pages	Prc. Date Record Date CTO No. EPA Cat. #	Author Affil. Author Recipient Affil. Recipient	Subject/Comments	Classification	Keywords	Sites	Location FRC Access. No. Box No. CD No.
						BLDG.530 UST 180C UST 227 UST 234 UST 240A UST 240B	
N60028 / 001131 DS.A016.10057 & SWDIV SER SWDIV SER 06CA.JS/0878 MISC N68711-00-D-0005 00150	09-23-2002 **08-01-2002** DO 16 DO 16	TETRA TECH EM INC. NAVFAC - SOUTHWEST DIVISION	ENVIRONMENTAL CLOSEOUT STRATEGY/SCHEDULES - INCLUDES SWDIV TRANSMITTAL LETTER BY J. SULLIVAN	ADMIN RECORD INFO REPOSITORY REPOSITORY	ACTMEMO ARSENIC AST BCT BRAC CAP CERCLA COST EBS EE/CA FFSRA FOSL FOST FS GW HERBICIDE LF METALS NPL PAH PCB PIPELINE QAPP RAB RD REMEDIAL RI ROD SAP SEDIMENTS SI	001 003 004 004 005 006 007 008 009 010 011 012 013 014 015 016 017 019 020 021 022 024 025 027 028 029 BLDG. 257 BLDG. 289 BLDG. 290 BLDG. 3 BLDG. 325 BLDG. 335	SOUTHWEST DIVISION

APPENDIX B: ADMINISTRATIVE RECORD INDEX (Continued)

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					SLUDGE SOIL SOLVENTS SVE SVOC TPH UST VOC WWTP	BLDG. 41 BLDG. 62 BLDG. 99	
N60028 / 001149 DS.A016.10454 MM MM N68711-00-D-0005 00030 00030	03-19-2003 **02-04-2003** 00016 00016	TETRA TECH EM INC. NAVFAC - SOUTHWEST DIVISION	DRAFT REMEDIAL PROJECT MANAGERS AND BASE REALIGNMENT AND CLOSURE CLEANUP TEAM MEETING MINUTES FROM MEETING HELD ON 04 FEBRUARY 2002 - INCLUDES AGENDA, SIGN-IN SHEET, HANDOUTS AND SWDIV TRANSMITTAL BY J. SULLIVAN (WITH ATTACHMENTS)	ADMIN RECORD INFO REPOSITORY REPOSITORY	PCB TPH VOC	009 010 011 011 013 016 027 BLDG. 335	SOUTHWEST DIVISION
N60028 / 001149 DS.A016.10454 MM N68711-00-D-0005 00030	03-19-2003 **02-04-2003** 00016	TETRA TECH EM INC. NAVFAC - SOUTHWEST DIVISION	DRAFT REMEDIAL PROJECT MANAGERS AND BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP TEAM (BCT) MEETING MINUTES FROM MEETING HELD ON 04 FEBRUARY 2002 - INCLUDES AGENDA, SIGN-IN SHEET, HANDOUTS AND SWDIV TRANSMITTAL BY J. SULLIVAN (WITH ATTACHMENTS	ADMIN RECORD INFO REPOSITORY	PCB TPH VOC	009 010 011 013 016 027 BLDG. 335	FRC - LAGUNA NIGEL 181-03-0186 4 OF 6 RF5154
N60028 / 001178 DS.A026.10411 & SWDIV SER 06CA.LL/0061 PLAN N68711-00-D-0005 00010	02-06-2004 **01-26-2004** DO 026	TETRA TECH EM INC. NAVFAC SOUTHWEST DIVISION	DRAFT PROPOSED PLAN FOR SITE 13, OFFSHORE SEDIMENTS - [INCLUDES SWDIV TRANSMITTAL LETTER BY L. LANDERS]	ADMIN RECORD INFO REPOSITORY	DDT PAH PCB TPH	013	SOUTHWEST DIVISION

APPENDIX B: ADMINISTRATIVE RECORD INDEX (Continued)

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N60028 / 001262 NONE PUB NOTICE NONE 00007	03-03-2005 **03-26-2004** NONE	NAVFAC - EFA WEST NAVFAC - SOUTHWEST DIVISION	PROPOSED PLAN FOR OFFSHORE SEDIMENTS (SEE AR #1263 - COMMENTS ON THE PROPOSED NO ACTION PLAN)	ADMIN RECORD INFO REPOSITORY	PROPOSAL SEDIMENTS	013	SOUTHWEST DIVISION - BLDG. 129
N60028 / 001265 NONE PUB NOTICE NONE	03-03-2005 **04-01-2004** NONE	SAN FRANCISCO CHRONICLE GENERAL PUBLIC	PUBLIC NOTICE ON THE PROPOSED PLAN FOR OFFSHORE SEDIMENTS	ADMIN RECORD INFO REPOSITORY	PROPOSAL SEDIMENTS	013	SOUTHWEST DIVISION - BLDG. 129
N60028 / 001209 DS. B006.13044 & SWDIV SER. 06CA.JS/0523 MM N68711-03-D-5104 00012	06-09-2004 **04-06-2004** 00006	SULTECH NAVFAC - SOUTHWEST DIVISION	DRAFT MINUTES FOR REMEDIAL PROJECT MANAGER BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP TEAM MONTHLY MEETING, [INCLUDES SWDIV TRANSMITTAL LETTER BY J. SULLIVAN]	ADMIN RECORD INFO REPOSITORY	COMMENTS GW MTG MINS PAH PCB TPH	008 013 027 030 031 BLDG. 502	SOUTHWEST DIVISION
N60028 / 001264 NONE MTG MINS NONE 00040	03-03-2005 **04-20-2004** NONE	JAN BROWN & ASSOCIATES V. JENSEN NAVFAC - EFA WEST	PUBLIC MEETING TRANSCRIPT FOR 20 APRIL 2004 INSTALLATION RESTORATION PROPOSED PLAN OFFSHORE SEDIMENTS - INCLUDES PUBLIC MEETING PRESENTATION	ADMIN RECORD INFO REPOSITORY	MTG MINS SEDIMENTS	013	SOUTHWEST DIVISION - BLDG. 129
N60028 / 001263 NONE COMMENTS NONE 00004	03-03-2005 **04-30-2004** NONE	ARC ECOLOGY E. BACH NAVFAC - SOUTHWEST DIVISION L. LANDER	COMMENTS ON THE PROPOSED NO ACTION PLAN [INCLUDES NAVY RESPONSE TO COMMENTS] (SEE AR #1262 - PROPOSED PLAN OFFSHORE SEDIMENTS)	ADMIN RECORD INFO REPOSITORY	COMMENTS PROPOSAL	013	SOUTHWEST DIVISION - BLDG. 129

APPENDIX B: ADMINISTRATIVE RECORD INDEX (Continued)

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N60028 / 001235 DS.B037.14238 & SWDIV SER BPMOW.LNL/0127 RPT N68711-03-D-5104 00050	12-06-2004 **11-19-2004** 00037 SOUTHWEST DIVISION	SULTECH C. ROSE NAVFAC -	DRAFT RECORD OF DECISION [INCLUDES SWDIV TRANSMITTAL LETTER BY. R. PLASEIED]	ADMIN RECORD INFO REPOSITORY	PAH PCB TCE TPH	013	SOUTHWEST DIVISION - BLDG. 129
N60028 / 001237 DS.B006.13072 MTG MINS N68711-03-D-5104 00013	12-10-2004 **11-24-2004** 00006	SULTECH NAVFAC SOUTHWEST DIVISION	02 NOVEMBER 2004 DRAFT REMEDIAL PROJECT MANAGERS AND BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP TEAM (BCT) MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS PCB PCBS	009 010 011 013 021 024 BLDG. 233	SOUTHWEST DIVISION - BLDG. 129
N60028 / 001260 NONE CORRESP NONE 00018	02-22-2005 **02-22-2005** NONE	NAVY VARIOUS AGENCIES	FINAL RESPONSES TO REGULATORY AGENCY COMMENTS ON OFFSHORE SEDIMENTS, DRAFT RECORD OF DECISION (DOCUMENT NOT DATED. USED TRANSMITTAL DATE AS RECORD DATE)	ADMIN RECORD INFO REPOSITORY	COMMENTS ROD SEDIMENTS	013	SOUTHWEST DIVISION - BLDG. 129

Note:
This Administrative Record (AR) Index includes references to documents which cite bibliography sources. These bibliographic citations are considered to be part of this AR but may not be cited separately in the index.

APPENDIX C
PUBLIC NOTICE, ROSTER OF PUBLIC MEETING ATTENDEES, AND PUBLIC MEETING TRANSCRIPT

590 - SAN FRANCISCO CONDOS FOR SALE

MISSION TERR, Fab new 3BR 2BA condos for $415,979; Will be open, 4/11/04. Avail. to households w/ $95K annual income, under SF Affordable Housing Incl. Prog. Princ. only. Go to www.sf-realestate.com Call Agt, 415-345-3036

POTRERO HILL 2/2 penthouse condo. 2 Lg vu dks s/s kit w/ granite, hdwd flrs. $799K. Open Sunday ★Agt David415-806-1010★

CATHEDRAL Hill 3Br/2Ba, prkg, secure, w/d, newly remod, 66 Cleary Ct. $510K Agt 415-310-1839

592 - EAST BAY CONDOS FOR SALE

CONCORD $165K Cute 1Br tile flrs, lg BR w/walk-in closet, lg patio, nr shops/ Bart/fwy agt 925.388.7446

EMERYVILLE-WATERGATE 510-654-8700 Pac Pk Plaza 650-6500 Low or High rise watergatesales.com

30 story lux hi-rise 1&2 br SF/GG view 510.655.7777 PacificParkRealty.com

30 STORY LUX HI-RISE 1 & 2BR, Bay & Hill Views. P-3 Sales, 510-601-8380

FSBO Oakland 2500sf Loft 2BR/1BA, 2 pkg, J. London Sq. $619K. 510-326-4377

594 - MARIN CO. CONDOS FOR SALE

NOVATO Beautiful upper end condo. By ownr. Alameda del Prado, $520k, 20% dn, ownr finan only. Joan or Ken 707-568-5764

596 - PENINSULA CONDOS FOR SALE

BELMONT Hills 3br/2ba Luxurious condo, 1460 sq. ft, asking $495,000. Call listing agent Rosalind Chin at 650-245-2378

PACIFICA 2/2 CONDO + Comm'l Space by the Sea. $518K. 650-346-9838

597 - BAY AREA LOFTS FOR SALE

SOMA/ Live/Work Loft Stunning loft, soaring ceilings, mstr br w/xtra office area, walk-in closet & bathrm w/a skylighted shower in slate. Roof deck w/SF views. $1.05M David Gowan TRI/CB 415-229-1295

Rentals | 600

601 - SAN FRANCISCO APTS - FURNISHED

$1195 PACIFIC HTS Studio TV/cable. No pets. 3 mo min. lease. 415-776-8420

$1400 & Up • No Security Deposit • 1, 2 & 3 Bdr Apts

ASHLEE SUITES

* VISA/MASTERCARD
* Pets OK, FAX
* Furn'd & Accessorized
* Short/Long Term Rental
* TV/Cable. All Utils. Incl.

1029 Geary/Van Ness 415-771-7396

$2000 & Up 1 & 2 BR's

Try it Furnished

Great No. Beach Location
Pano Views of SF Bay
Balcony in Every Home
PG&E, Water & Garb. Incl
Heated Swimming Pool
Short & Long Term
Parking Available
Walk to Famous Italian Eateries, Coffee Houses and Shopping.

2140 Taylor

415-885-0333 or 433-3333
Vu this or other Listings
trinitymanagement.com

$2000 & Up Russian Hill BEST VIEWS IN CITY! Doorman Pkg Avl Lndry Maid Srvc/ShortTerm Avl 1000 Chestnut @ Hyde 415-433-3333 or 474-5333

EQUAL HOUSING OPPORTUNITY

ALL real estate advertising in this newspaper is subject to the Fair Housing Act which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin, or an intention to make any such preference, limitation or discrimination."

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis.

If you have responded to an ad which you believe to be misrepresented, please call our "Truth in Advertising" hotline at 415-615-3585, Monday-Thursday 9-11:30am, and we will investigate.

San Francisco Chronicle

602 - SAN FRANCISCO APTS - UNFURNISHED

$500 & Up Downtown Efficiency Studios pvt ba kitchenette water garb heat elec included lndry in bldg. Call 415-885-3343.

$595 -$795-$995 All NEW LARGE STUDIOS & 1BR good mgmt 415.885.0695

$795 & Up Renov Studio Lndry Facility Conven Loc nr Civic Cntr 415-626-5122

$800 FELL/STEINER 1BR, Carpet, Good Light. Cat OK. 415-281-3233

$800 Studio inlaw apt w/ kit. Grdn view. Nr Geneva /Mission 415-218-2255

$825 & Up Stu $1250 & Up 1Br's drmn, fountain, gdn lndry, prkg avl nr Civic Center, 415-673-1608.

$825 & Up Cln Remod Dntwn Studios, walk to Bart & Civic Cntr, lndry in bldg no pets, 415-292-7130.

$825 up Stu;$1295+ 1-2 BR

CitiApartments.com

No fee 415-861-1111

$825 - $975 Lwr Pac Hts STUDIOS. Crpt, eat-in kit, lndry. 415-922-0178

$825 &up Studio Remod. kitc. & bth, carpet. No fee no pets. agt 415.775.2257

$825 + $300 dep. Dwntwn Studio, 440 sf, lrg kit, lrg ba, lrg clost 415-776-7284

$850 Spac studios lg wlk-in clsts. Nu cpt,pnt,blinds Well managed beaut vict style bldg. 415-929-2279

$850 & up Studio & 1BR West. Add. Sunny, lndry. No fee. agt 415-740-0192

$850 Western Addition Studio Top flr softwood flrs TCO, 415-621-1100.

$875 Broderick/McAllister Studio, hdwd, View, lndry. Cat ok 415-281-3233

$875 & Up Daly City Spac 1Br's w/w aek disp deck ldry pkg pool650-757-9040

$895 & up Studio/1br Nob Hill remod hwd, no pets No fee. agt 415-221-2032

$900 studio,lwrNobHill Lg quiet,lndy,utils incl.NoPk, n/p,nofee agt415.771.3024

$900 Haight Panhandle studio, new kitch & hdwd flr, laundry. 408-572-4125.

$900 Hayes Valley Studio w/w, lndry in bldg.pkg av No Fee agt 415.626.2779

$925 Lwr Haight Bright studio. Hdwd flrs, Cat ok. Charm! 415.552.2518

$925 lg studio util pd. Nu pnt, ww, W/D. Eleg bldg Union Sq. 415.885.6563.

$925 -$1050 Large Studios Views, Hdwd. Lndry. 150 Haight St. 415-864-8316

$925 SOMA Large Studio hdwd dishwsher laundry TCO, 415-621-1100.

$950 7th Ave nr Clement studio. Non smoking, no pets. 415-387-1510

$975 - $1500 MARINA Studios &1Brs, elev, lndry prkng avail. 415-922-0687

$975 Corbett studio, quiet, gdn vu, ww, AEK, lndry noP/S 415-648-9429

$980 STUDIO. Van Ness & Green St. 415-982-5555 415-385-4327/ 750.1388

$995 SUNNY STUDIO Completely Remodeled Sec. Dep. Bond Optional 350 Gough, 415-861-8660

$995 -1395 NOB HILL 1BRs hdwd or cpt, 1u grdn, vu/ share dk,sec 415-441-1444

$995 STUDIO. w/w carpet lg kitchen washer/ dryer No fee. agt 415-221-2032

$1000 Richmond Dist. 1BR w/w crpts, lndry. No pet 415-566-1517

$1000 Civic Centr 1Br eat-in kitch carpet intercom elevator TCO415-621-1100

$1000 Pac Hts Studio hwd flrs walk-in closet shared yard TCO, 415-621-1100.

$1025 NOE/27TH ST. Lrg Sun, view, quiet Studio. No pets. 415-285-2617

$1050 1Bd/1Ba Sunset 1235 – 17th Avenue #2 Parking Avail, Laundry To Vu 668-2700 &433-3333

$1050 Innr Rich 1BR incl: wtr/grbg: Lndry No pets. Great loc. 415-386-4275

$1050 RICHMOND 1BR w/w, fp, laundry, parking included 415-586-4963

$1085 195-16th Ave/Calif. 1BR, hdwd, gar, new pnt, sunny. 415-675-4717

$1095 Twin Peaks 1-Bdrm w/w aek disp lndry elev no pets Call 415-821-2199.

$1095 remod studio Suttr /Taylor hwd, lndry, top fl vu, heat incl 415-441-2227

$1095 Richmond 1BR hwd vu of GG Bridge nr GG Pk & transp. 415.474.4104

$1095 -$1450 STU/1BR. Grt locs! Spac., hwd, walk-in closets 415-922-0178

$1095 Noe Valley 1BR, gar Open Sat-Sun 1-2 pm. 10 Day St./San Jose Ave.

$1100 -$1300 Jr. 1BR. 359 Fillmore St. Open Hse Tue /Thur 5-6:30pm, Sat 12-2 415-601-1019/203.2730

$1100 Pacific Hts Studio wlk-in clos,hwd,no pet;nr transp&park 415.474.4104

$1100 Sunset 1BR, 1400 26thAv#6. No gar.Opn1-6 415-392-7733 650-345-8632

$1100 1BR Sunset, 2920 Taraval, cln, painted. Opn Sa-Sun 12-2. 415-564-5625

$1100 Mission 1Br Vict crpt high ceilings laundry TCO, 415-621-1100.

$1100 NobHill huge remd Studio, lndy, vus, hwd,dw no fee agt 415-291-0710

$1150 SOMA Large 1Br Top Flr Softwood Floors TCO, 415-621-1100.

$1175 Broderick/McAllister Studio, hdwd, View, lndry. Cat ok 415-281-3233

$1175 Sunst/Lincln/42nd Lg brite 1br,hwd,big clsts nu pnt nrGGP650-5791208

$1195 Richmond, near USF lg 1br; also 2BR avail. 415.474.4104

$1195 (minus $95 credit) Vict 1br hwd & mrbl, nr 24th BART 415-647-7900

$1195 1BR Noe Vly sunny cpt, ldy,prkg $150 no pets no fee agt 415-740-0192

$1200 North Beach 1Br
!!GREAT LOCATION!!
2133 Stockton & Bay St.
Fplc. D/w. Lndry. Pkg Avl
415-433-3333 to View!

$1200 Wstrn Addition 1Br Top Flr hdwd tile ba lndry eat-inkit TCO415-621-1100

$1245 Studio; $1550 1BR; $1885 2BR at BAYSIDE VILLAGE. **Up to 1 Month Free Rent!** 1-877-781-5301.

$1295 & up Financial Dist

GOLDEN GATEWAY
415-434-5700

Studios, 1, 2, 3 & 4 Bedrm Apartments & Twnhms

"Spring On The Waterfront"
*on Select Units

3 MONTHS TERM AVAIL.
•Waterfrnt Bay & City Vus
•Covered Parking Avail
•On-Site Supermarket
•Tennis, Swim, Fitness Ctr

460 Davis @ Jackson
10-6 Mon-Sun; no pets

$1295 1Br Upr Nob Hl hwd sunny free mo. w/lease 1155 Leavenworth Sat 2-4 or by appt. 415-441-2245.

$1295 remod 1BR, Sutter/ Taylor, lndry, new kit w/ DW, heat inc 415-441-2227

$1295 Corbett 1br vu, ww AEK, lndry, prk avl. nopet no smoke, 415-648-9429

$1295 Rich Lrg 1BR hdwd lg clst; lndry; no pet; wtr & garbg incl. 415-668-5831

$1300 - $1500 MISSION 1 BRs Avail. Lndry. Sec 8 OK. 415-252-1333

$1310 767-6th Ave/Fulton 1br w/extra rm, remod, hwd flr, gas 415.386.5225

$1350 1ST MONTH FREE! MARINA Large 1 Bdrm. Sunny & Sparkling Clean! No pets. 415-567-9751

$1350 Noe Vly, lg studio cath ceil, all utils incld, w/d, cable, 415-824-2355

$1350 Panhandle Lrg 1Br hdwd flrs disposal lndry TCO, 415-621-1100.

$1350 Nr Seacliff 1BR, AEK crpt, lndry, parking, suprmrkt acrs st. 415-441-2227

$1390 Lg tp flr, 1BR, VU, frplc, pkg. 42/Vic no pets rosano.com 415-661-4281

$1,395 & Up SPACIOUS
1,2,3 BRs. Lrg. Balconies, Pool, Lndry, Undergrnd Prkg. Close to Fwy, Shops & 24Hr fitness. Call for Move in Specials!
Townhouse Plaza
(650) 342-9724

$1395 Upper Noe Vly 2br apt, view, deck, crpt, blinds, no pets. NS pref. Open House Sun 4/4, 11am-Noon, 4447A 23rd St. 415-331-3838 x 300

$1395 Lwr Pac Hts Spac 1Br Vict pkg incl w/w aek eat in kit wlk in clst lndry elev no pets 415-550-0300

$1395 PacHts/Lwr PacHts 1Br's pkg incl w/w aek dishwsr disp lndry elev no pets 415-550-0300 x16.

$1395 1BR; $1795 2BR UC/ Sunset fp, elev, d/w, aek lndr, pkg inc415731-5495

$1400 & Up

Spring Is In The Air..

www.thevillas parkmerced.com

415.405.4600

$1400 Inr Sunset 1BR, immac, sunny, nu pnt, hdwd gar. NP/NS. 415-453-6678

$1425 Pacific Hts 1Br new paint & carpets, elev, no pkg, no pets 415-440-7372

$1440 2BR, 1Ba. 42nd/ Vicente Pkg, lndry no pet rosano.com 415-661-4281

$1450 Richmnd Calif/18th Ave. ex lg 1br + 2nd br/den, e-in kit, rmd superclean! 415.350.1818

$1450 Lwr Haight Lg 1BR $1850 Pac Hts 2BR Hwd, Views. Agt. 415-602-3583

$1495 Lwr Haight 2Br hwd flrs sep dining area prvt deck TCO, 415-621-1100.

$1495 up N.Beach 1&2br Remod, lndry in bldg. Vu 415.221-2032 415.362-3473

$1500 Russian Hill Jr. 1BR $1875 Spac 1BR prestige bldg, hdwd flrs, Garage avail. 415-776-1310

$1500 Pac Hts, sunny 1br top flr,w/w crpt, incl prkg no pets 415-285-8887

$1500 MARINA, light 1BR, tandem parking included. 415-567-2580,415-586-6923

$1550 USF 2Br 1ba, remod $950 Lrg Studio. Pkg avail lndry, no pet 415-351-1398

$1550 PresidioHts xlg 1BR Hdwd,remod kit & ba, FP No fee. agt 415.221.2032

$1550 Sunset nr. beach 2BR, 1BA, w/w crpts, gar. Cat ok. 650-588-6841

$1595 Nob Hill cheery 1BR full liv/din rm, bright, french doors, lrg closets no pets. 415-441-7317 www.bayareaapts.com

$1595 Marina 1BR, elev, lndry, AEK, prkg, trans/ 30Ex bus ln 415-923-9051

$1595 Noe Valley 2BR, gar 732 San Jose/29th St. Open Sat-Sun 1-2 pm

$1600 Pac Hts 2Br 1Ba w/w aek disposl dishwsr laundry elev prkg incl no pets 415-550-0300 x16.

$1625 Pac Hts lg studio. GG view, new kit/bath. hdwd flrs. 415-710-5749

$1640 1bd NO BCH, pkg. incl. UPDATED. No pets rosano.com 415.398.0960

$1650 Nob Hill-Taylor 1BR top flr. Great Bay View! Hwd. Lndry 415-563-1896

$1650 2Br Lrg Brand New Granite nr Davis Medical

$1800 Haight Ashbury Lg 2Br hdwd din rm redone kitch TCO, 415-621-1100.

$1850 Pac Hts TH 1BR+ small den, fp, deck, gar. All amen. 415-664-8220

$1895 Dolores/24th lovely bright 1br w/prkg. W/D Hdwd,View 650-342-5654

$1900 NOB HILL 2BR Spac, Bright, W/D, gar. Vu. No pets/smkg. 415.665.4235

$1900 Rich. remod. 3BR, 1BA, hdwd flrs, granite kit., frplc. 415-971-9071

$1900 Richmd, 8th/Clement, 4th flr pnths, 3br/1ba 1 kit, LR/DR. 415-751-0229

$1900 Rich 2 lg br tp flr vu sw crnr DR hi ceil lndry heat GG pk 415-564-5638

$1950 Marina/CowHollow beaut lrg 1BR, hdwd flrs. No pet. Refs. 415-921-3013

$1950 Nob Hill 2br2ba gar balc. 1650 Jackson 24hr Sec Agt 415-668-7915

$1995 - $2700 Jackson Sq. 1br Pnthse & 3br apt. remod, hdwd, new crpt. fplc, view, 415-332-5298

$2000 MARINA 1BR Sunny, Lrg. Updtd, Hwd Top flr, Vu's. 415-674-7633

$2000 Buena Vista 1BR's DR, vu, hwd. Lrg closets. w/Prkg. 415-621-0826

$2000 Richmond 3BR, Open Sat/Sun 2-4, 1336 Clement. 415-516-2066

$2040 PAC HGTS 2bd 1ba Frplc. Parking. No pets. rosano.com 415-346-1457

$2100 NOB HILL spac, lux 1BR, 1Ba, FP, prkg, hdwd, view, din rm 415-771-3794

$2300 Russ Hill 2BR/1.5BA New Construct, Hdwd Pk SFM 415-641-7900 x103

$2300 TWIN PEAKS 2BR, 1.5 Ba, prvt, views, bckyd, prkg, W/D. 415-725-3060.

$2375 2BR/3BR Penthses

CitiApartments.com

No fee 415-861-1111

$2400 Marina Villa, 1BR, New Kit (D/W), BA (jacuz) Din Rm, Spacious, Charm Garden, deck. PET OK. Prk avl Dick 415-673-0587

$2500 upper, $2200 lower. Hayes Vly 2 units, 3 BR/u + lounge, newly renov, new appls, crtyd lower u, close to many amenities. Hauer Const 415-725-1036

$2500 Noe Casto, lg, brite 2br, 2ba, fplc, dk, elev, w/d, prkg. 650-342-6046

$2600 Pac Hts. 2BR 2BA full liv/din rm, hwd, fplc, W/D No pets 415.674.1412 www.bayareaapts.com

$2700 Noe 3BR 1BA LR DR lg. kit., d/w, w/d, grdn gar util. incl 415-606-3770

$2750 Pac Hts, sunny, lg beaut 2BR, 1ba, hdwd flrs, frplc, 415-794-3813

$3184 RussianHill 2br 2ba Great vus, delux kitch, fp, spa, w/d, pkg avl Sun12-4 1400 Wash. 415-776-1357

$950-$1025 STUDIOS 359 Fillmore St. Open House Tue/Thur 5-6:30; Sat 12-2 415-601-1019/203-2730

$2050 up PacHts 2BR 2ba FP, crpt, prkg, storage, no pets. 415-776-8420

LARGE 1BD Apts for rent Starting @ $1250 Great Location! 415.664.0105

622 - SAN FRANCISCO FLATS - UNFURNISHED

$1195 Noe Vly/Eureka & 22nd, New Lrg 1br/1ba, w/d, close to transportation. 415-648-4836

$1325 Bernal Hts. lrg 1BR, beaut. vu, frpl, new cpts. 3 closets 415-647-0629

$1550 43rd/Judah 2BR nu kit/cpt. Deck. Gar. N/S. No pets. 415-334-3855 D

$1550 Bernal Hts nice 2br! $1550 Nr Market+Dolores 2br must see 415.759.1036

$1595 Bay View Dist, Lrg Immac remod 3BR 2BA, frplc, W/D, No Pets. 415-716-4268; 495-6000 x414

$1600 19th/Mission 3bd $1700 Noriega/40 3bd gar PACIFISIA no fee 668-4355

$1650 Sunset 14th Av 2BR 1ba, str prkg, N/P. Nr tran /shops 415-664-6000 msg

$1650 Visit. Vly 3BR Uppr Unit, Campbell Ave, No pets, Agt, 415-337-6807

$1675 3rd Ave/Calif 5 RM Vict Fab Kit nu paint Hdw yd patio4157753255

$1695 GG HTS 2BR, lg LR. Deck. Beaut. view. No pet EZ pkg 415-509-7263

$1750 Bernal Hts 2br/1ba w/d, d/w, ww, priv deck sunny view 415-285-8507

$1795 Richmond 23rdAve /Clement 4BR 1BA, hdwd flr, yard. 415-756-7304

$1900 45th/Pt Lobos 3BR 2BA 1500sf blt'96 lndry yd remd kit&ba 415-816-3132

$2000 Rich 586-36th Ave upr 3br 2ba, fp, hdwd/cpt DR, Gar W/D 415-265-5582

$2400 Ashbury Hts. ocean vu, multi level unit, prkg, decks, skylts, hdwd 2BR 1.5BA, fp. 866-428-1271

$2400 Upr Sunset, 3BR 3BA, pano views, 2 fplcs, gar., W/D, 650-596-3489

$2500 22nd&Irving, nu 3br 3ba, fp, hwd,Jacuzzi,patio gas stove. 415-235-6268

$2500 Noe Vly 2BR, view, fully remodeled. Excl loc. Hdwd fls. 415-541-9333

$2600 MARINA lg 2br/1.5, FP, priv dk, hdwd 1car 2units avail 415-305-8702

$2800 3Bd/2Ba Flat OPEN SUN 2:00 – 4:45 577 – 27th St #1 @ Castro Mod, Views, W/D, 3 Huge Patios To Vu 415-433-3333

$2850 Castro condo pano vu, lg 6rm Vict, mod. 2FP dk, yrd, W/D 415-515-7664

$2875 Cow Hollow 3br/2 ba, e-z pkg, Presidio vw, fplc, d/w. 805-217-4520

$2975 Cole Vly 2BR, 2BA Pent. SF/ view, gar., eleg., hdwd fp w/d 415.820.1535

$2995 MARINA Lg 3BR 2ba Frplc, sunny deck, hdwd, hi ceilings. 415-931-8259

$3500 Pac Hts 2BR/2BA Upper unit in 2 unit bldg, hwd, FP, Close to trans. TRI/CB 415-229-1224

$2600-2800 Unique Tel Hill (Calhoun). 1BR + hdwd [illegible]

632 - SAN FRANCISCO CONDOS/TOWNHOUSES UNFURN.

$2900 Marina Condo. 2bd /2ba, view, lg LR/DR, fplc, in-unit w/d, elev, sec sys, 1-car gar. Open Sun 4/4, 2-5 pm. 415-567-7164

641 - SAN FRANCISCO HOUSES - FURNISHED

$2200 Glen Park unique w/loft & indoor grdn, no smkg,cat ok 415-282-4563

642 - SAN FRANCISCO HOUSES - UNFURNISHED

$1595 Sunset 2BR, clean, hrwd flr, gar. Nr Ocean & G.G. Park. 415-474-4104

$1695 Outer Mission 2BR, 1ba, +bnus rm, 2car fnc'd yd, hwd. Agt 415-841-2105

$1700 BernHt 2/1 det.well maint. FLR, FDR, sweeping bay vus.78 Robinson Barb Co 415-566-0186x121

$1700 65 Midcrest Way 2br/1ba, gar, fpl, hwd, vu new kit, w/d 415-613-4967

$1900 Outer Mission, 2Br 1Ba, avail now, sec 8 ok 408.250.5983 408.270.3919

$1950 near City College 2-Stry 4Br1Ba 1car gar nu crpt view Joe650-873-3460

$2100 Bayview 3BR, 1BA. Sec 8 OK Nr Silver Ave. No Pets N/S 510-758-8111

$2100 Sunset 2br 1ba FDR or 3rd br Lrg LR prk vu. Sec 8 ok 415-218-4249

$2400 Bernal Heights 3BR, 1BA. Garage. Deck. 415-421-4062. 415-282-2441

$3000 DC, fantastic view, 3BR 2BA, 2 car, + 1BR inlaw apt, hdwd, mod. kit, yard, 650-348-8099

651 - PENINSULA APARTMENTS

$299 Moves You In!
1 + 2 Bedrooms
Large units, fitness center, on site staff
650-359-1757
*OAC

$845 RWC, Seniors 55+, Great 1brs, newly remod Walk to shopping. Gated community. 650-367-0177

$850 BELMONT 1BR 1BA, View. 1-car. Lndry. Nr dwntwn. 650-222-0689

$900 & $1200 SB 1 & 2 BR gas, water & pkg includ'd newly remod 650.619.9380

$900 / $950 San Mateo 1BR Util. El Camino. Clean 650-588-5868 650-697-8111

$950 -$1100 Daly City **1 MONTH FREE.** 1br, gated parking, nr BART, Fab vu, cul-de-sac clean bldg. 650-878-9892

$950 & $1200. 1 BR & $1300 1BR +loft. Vault ceil, bal, skylts, fpl. d/w, gar w/rem. +stor. Vus SSF 650-273-1764

$950 Belmont Lg 1br/1ba remod (1 mo. free rent). Walk to train, conviences No pets. Agt 650-222-2133

$965 Daly City extra lrg 1br view, prkg, new crpt /pnt, lndry. 650-722-1487

$995 & up Studio 1BR's View, gar, strg. 572 King Dr. Daly City 650-878-9570, 650-343-1448

$995 San Mateo 1BR Exc loc, nr El Camino, prkg, ldry facility. 510-886-0144

$1000 & $1150 DC, new remod, lg 1BR's nr trans, no pet 510-537-1751

$1025 & up. SSF. 1, 2 & 3 BR apts. Grt loc. Kitchen apps incl. Exc move-in specials. 650-871-8770

$1025 DalyCity newer 1BR + loft, Gar, 4-plex nr Bart, storg. 415-682-2890

$1025 SSF 1b/1b, D/w, microwave, wlkin clos, 2 pkg. Open. 650-784-9612

$1050 Large sunny 1BR, Balcony, VIEW OF BAY. pool, prkg, trees, exc cnd Exclusive Crestmoor Park SBruno. N/P. 650-634-0458

$1050 San Mateo 1BR, near Central Park, pool, sauna, laundry. No pets. 710 Laurel 650-347-5403.

$1050. San Bruno lrg 1br. walk to Bart/dwntwn. Lndry. Agt 650-755-2969

$1050 DC Cr Colony 1BR Carport. Shuttle to BART AEK No pet 650-533-4114

$1050 San Carlos 1BR Exc. loc. Pkg. $500 move-in bonus. 650-593-2218

$1095 -up Belmont. Spac, quiet, bright 1&2Br. Lndry pool cov pkg 650.619.9179

$1100 San Bruno. Lrg 1BR w/pvt garage. Nr. shops, trans, fwy. Washer dryer. Cats OK. 650-588-3011

$1100 Millbrae lrg sunny 1BR, W/D, carport, convenient loc 650-259-7901

$1150 -$1200 Burlingame 2BRs. Lndry Pkg wtr/garb incl. No pet. 650-345-8949

$1175 Daly City lg 2Br 1Ba gar, cpt, LR, kit; nr transp /grocery. 650-291-8398

$1195 Millbrae Lg 2br/1ba (1 mo. free rent) Close to transport. & conviences No pets. Agt 650-222-2133

$1200 Inc util &cbl. Lg 1BR abv sgl fmly res. Grt RWC loc. Avl 5/1. 650-364-3574

$1200 Pacifica 2/1, Gar, Balc, Vu, Lndry, No Pets. 650-533-8939, 259-7603

$1250 & Up. SSF. Spacious 2 & 3 BRs. Views, serene loc. Grt move-in special. Call (650) 952-4789.

$1300 - $1350 D.C. 2-Bdrm MOVE IN SPECIAL nr Bart. Agt, 650-755-0610.

$1350 DC extra lg 2br/2ba DR, crpts/drapes, frplc gar, nr trans 650-992-1278

$1400 pvt 2 br/1ba apt near Stanford EPA, NS/P Avail 5-01 650-321-6051

$1475 RWC Lge & Sunny 2br cottage. new remod. lge kit, fp, 650-368-1712

$1500 RWC 2bd / 1ba / Duplex new remod / fireplace. Terry 415 495-3950

$1500 S Mateo Remod 2Br 2Ba, 1200sf, pool, lndry in unit,rent neg 650.996.4478

$1550 RWC Charming, vry lg 2BR 1BA, fplc, DR, 2-car enclosed Gar. Best Westside Loc. 650-483-0446

$1550 DC 2br beautiful vu gar nu pnt WD frig wtr

652 - PENINSULA HOUSES

$1650 Millbrae 2/1+bonus rm. Frplc, w/d, yard, near BART. Pet?. 408-605-1249

$1650 W. Burlingame dplx 2BR 1BA, fplc. Pvt patio. Grdnr. Gar. 510-471-1898

$1700 San Mateo Sunny & Clean. 1528 Lorraine Ave. 707-257-2469

$1700 Pacifica, 3br/2ba, full bsmt gar, vu, yard. Pet ok? NS. 650-359-0856

$1800 Burl 3br 1ba duplex nr Brdwy, new hwd flrs, bath, paint, fpl, 1 car gar, W/D hkup, sml yd, no pets. 650-697-1151

$1800 Menlo Prk, 4BR 1BA, new cpt/pnt, stv/ frig/WD, 408-578-4707

$1900 SSF Buri Buri 3BR fplc, new pnt, deck, 2 s/s gar,lg yd. agt415-804-8715

$1900 DC immac 3br lg FR fpl pvt gdn woods; no pet gar; nr trans 650-755-9105

$1980 Pacifica/DC 3Br2Ba family rm, eat-in kitch, fp frig, 2CarGar 650-952-6124

$2150 SSF Parkhaven 3BR, 2BA, 2 car gar. + bonus rm. No pet. 650-823-5005

$2275 Millbrae charm 3BR 1ba, DR, office, fplc, lg yd. Cls to BART. 305-944-6926

$2295 DC 5BR 3BA, 2 Kitchens. ocean view. 72 Montebello. 209-836-1489

$2300 SAN MATEO 3BR 2.5BA, LR, fplc, Gar. Nr transp. 650-438-1441

$2300 Belmont 3BR, 2BA, Bay vu, lrg dk, hdwd flrs, fplc, cat ok. 650-960-0346

$2500 San Mateo newly remod, 3br/2ba attach 2car gar. quiet lge yd. nr all frwys 650-365-1201

$2650 San Mateo Wtrfrt 3BR, 2.5BA, 2car; assoc pool/tennis650-578-1237

$2795 Burl. Ray Park 3br, 2ba. fam/patio rm, remod kit/ba 650-342-5654

$3000 SAN MATEO 5BR + Den 3BA DR, LR, FR, 2 FPs 3 car. 650-349-6045

$3250 San Mateo 6BR 4BA Great loc. New kit. Hdwd 650-588-5868 or 697-8111

653 - PENINSULA CONDOS/TOWNHOUSES

$1050 SB Shelter Creek 1Br, Bldg 7, gym, pool, no pets, clean 650-583-4395.

$1250 & up. San Mateo Like New 1BR, w/d, frpl, storage. NP 650-343-1448

$1650 DC 3BR 2BA hwd fpl Free shuttle toBART; pool gym;nrKaiser650.878.8186

$1650 San Mateo 132 44th Av, 3br, 2.5ba, new paint gar. No pet. 650-740-9717

$1900 SSF, Westborough 3BR 1.5BA TH, 2 car, patio Excl cond. 415-826-1658

$1,995 Burl. Like Nu 1335 sq ft. 2br/2.5ba. w/d frpl. 7 closets, NP 650-343-1448

$2200 RWC W.side NU 3br 2ba dplx, fp, AEK, yd, 2 car no pet 650-369-8044

$2800 SAN MATEO **Gramercy On The Park** 2BR + Den + Sunrm. Gar. Daniel, 650-692-0628

661 - EAST BAY APARTMENTS

$650 1 MO. FREE RENT Oakland Jr. Studio Piedmnt Vlg lndry, no fee cat ok agt 415-531-6779

$695 up. **1 MO. FREE RENT** Pied.Ave Stu-1br$775 hwd no fee agt 415-531-6779

$700 – studio & $800 1BR nr Piedmont, prkg inside lndry in bldg 415-334-7863

$730 &up. **1 Mo Free Rent!** Oaklnd Pill Hill/Lk Merritt Studio/1BR remod. sunny crpt, balc, Cat OK. Elev lndry, pkg avail. No Fee agt. 415-531-6779

$740 &up Studio/1BR/2BR **1 MONTH FREE RENT!** Lake Merritt/Adams Pt. Elevator, lndry, pool, pkg, near BART, BUSES SHOPPING & FREEWAYS EZ viewing hours. no fee. agt. Pls call 415-531-6779

$800 -$1575 PRIME OAKL/ PIEDMONT AVE. AREA Top qual, vus, prkg, pool, studio 1&2br 510.759.9999

$825 to $1420
Studios &
LOFTS
Near Marina
San Leandro
Racquet Club
3/4 Mile to BART Station
26 Minutes to S.F.
(510)357-7131

$850 Vallejo nr ferry, lrg 1BR, remod, garage, no pets/smkg. 415-892-3239

$875 & UP. Jr., 1BR, 2BR Pool, Gym, Decks, Nr Lake Merritt. 510.832.7636 MOVE-IN SPECIAL!

$900 Up Walnut Crk/ Concord Bart EZ SF commute 1BR + Big 2BR/2BA

Manager's Special

12 acre secluded estate. Lakes, Ducks, Fountains, Pool, Jacuzzi, Exercs. Ctr, Gated Prkg. 888-644-6257

$995 up-Studio
1&2 BRs
ALAMEDA WATERFRONT
Hawaii life, beach golden sunsets Pool. Exec Ctr
MANAGERS SPECIAL
Ferry/BART 510/522-3869
www.rent.net/direct

$995 up S. Leandro Studio Extra Large 1BR & 2BR apts. All have fam rms

Manager's Special

Unique indoor year round pool. Exercise ctr. Great Washington Manor area. 510-351-5262

$995 up San Leandro Mgr's Special. Lge 1BR, pool. 510-351-8694, 510-483-6078, 510-895-0463

$1195 Alameda 2BR dplex all new hdwd flrs, lndry rm, garage. 510-521-9932

$1200 Berk. 1br renovated Exc. north campus location 415-260-6360

$1200 Lake Merritt Condo 700 sf 1/2 block to lake w/parking. 510-410-3403

$1300 Oakland 3BR 1BA.

662 - EAST BAY HOUSES

$2300 ANTIOCH HILLSIDE 2YR OLD 4BR 3BA 3-CAR GAR. NO PET, GARDENER CALL. (925) 755-3886

$2300 Dublin 5BR, 3BA, 2800 s/f, 2 yrs. new. No pets/smk. 925-939-6282

$2650 Piedmont 3BR, 2BA, large yard, deck, school, garage. 415-823-6593.

$3200 Berk ½blk UCB Historic home. Lge priv. garden 3BR 2BA 510-913-3039

$1750-1795 Vallejo New Wtrfrnt Hms 3bdrm 2.5ba w/den 1st mo free on app crdt 650.342.7955

663 - EAST BAY CONDOS/TOWNHOUSES

$1000 up E-ville rntl source Wtrgate/Pac Pk Plaza Low/hi rise. 510-654-8700.

$1100 up EMERYVILLE lux hi rise, 1-2BR, Bay views. P3 Sales 510-601-8380.

$1400 lg 1BR water view pool, tennis, gym, 15 min. to SF. Agt. 510-917-2697

$1500. Castro Vly 5 Canyons Area Quiet 2bd 1ba gar, AEK, wash/dryer, nr BART (925) 895-3649

$2500 Emeryville penthse Watergate, pool/gym, vu 2BR, 2BA. 510-847-6639

671 - MARIN CO. APARTMENTS

$1200 - $1650 Tib. 1&2Br 1Ba water views. Remod & upgraded, etc. Pool & tennis. 415-435-9235

672 - MARIN CO. HOUSES

$3500 MillVly Lrg Fam Hm Vus Mt Tam/EBay. Airy 3-4Br2Ba, fplc, wd. Adj to open space. 415-383-2774

673 - MARIN CO. CONDOS/TOWNHOUSES

$2500 Tiburon Remod 2BR 1BA Prvt Garden. View! Walk to shops/ferry/ transp. Pkg. 415-459-5628

674 LOFTS FOR RENT BAY AREA

$1800 OAKLAND close to bay br/bart. 2100sf. 3ba. Skylights 510-604-3983

675 OUTLYING RENTALS

$1975 Yountville-Napa Vly, great loc. 3BR 2BA, AC, fplc, tile kit. counters, access to pool, jacuzzi, tenn. crt, vineyard walks, 760-740-8900

677 VACATION RENTALS

NORTHSTAR Homes/Condos - All sizes Rentals 800-587-2070 agt

TAHOE – N./W. Vac. home westlakeproperties.com 1.800.870.8201

TAHOE North Vac. Homes www.rrentinc.com 800-424-8158 Brochure

TAHOE North Vac. Homes www.rrentinc.com 800-424-8158 Brochure

TAHOE So Rustin-Lux condos-homes 800-368-2463 www.relaxintahoe.com

679 SHORT TERM RENTALS

$29 Up /Daily $160 Up/Wk North Beach Renov Rms TV Maid Service Micro Refrig Call 415-986-9911.

$130 & Up/Wk $560/Mo. FinDist Grt Loc Cable Frig Micro 640 Clay 989-3568.

$140 & Up/Wk Furnished Rooms, South of Market Call 415-974-1296.

$225 & Up/Week Nob Hill Furn'd Pvt Bath Micro TV Refrig Call 415-346-5219.

$200WK/$780MO & UP meals 7 days a week maid services Mon-Fri 24 hrs. phone + ans serv.

THE KENMORE
1570 Sutter
415-776-5815
THE MONROE
1870 Sacramento
415-474-6200

FURN $1350 & Up. Sunny Isle Of Alameda. Pet Ok, Walk to Beach. NEPTUNE COURT, 510-865-8162.

685 ROOMS FOR RENT

$140 +/wk. Balmoral So. new Decor.+Furn. Clean, Safe. Quiet. 415-543-3304

$150 +/wk 706 Kearny St. 24hr v/mail. Satellite TV. new furn,cln 415.956.8858

$170 +/wk nrUnionSq fin dst comm. kitc,cable,v/m cln,safe,quiet415.673.5070

$750 MILLION $$$$$ VIEW Geary/Gough lux hi rise 2BR, pool. 415-710-5108

EQUAL HOUSING OPPORTUNITY

ALL real estate advertising in this newspaper is subject to the Fair Housing Act which makes it illegal to advertise "any preference, limitation or discrimination based on race, color, religion, sex, handicap, familial status or national origin, or an intention to make any such preference, limitation or discrimination."

However, gender preference is allowed.

This newspaper will not knowingly accept any advertising for real estate which is in violation of the law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis.

If you have responded to an ad which you believe to be misrepresented, please call our "Truth in Advertising" hotline at 415-615-3585, Monday-

693 HOTELS & MOTELS

$110 /wk up MAR. SPEC'L! Rent 2wks-get 1wk FREE! CURTIS HOTEL 559Valencia 415.621.9337

$150 Week & Up Laundry CHASE HOTEL 1278 Market 415-864-1562

$150 Wk Up Clean/Quiet BALBOA HOTEL 120 Hyde @ GG 441-9136

$160 Week & Up Pleasant SHIRLEY HOTEL 1544 Polk St. 415-928-3353

$160 Wk & Up Lrg Rooms 1685 Sacramento @ Polk 415-928-9637

$160 Week & Up Laundry DONNELLY HOTEL 1272 Market 415-552-3373

$180 Week & Up. Phones, Maid Service & Laundry 1105 Larkin 415-673-7721

$180 Wk & Up Lrg Rooms SARATOGA APTS. 1008 Larkin 415-776-9815

$185 & Up wkly. Pvt bath! Cable.Nazareth Hotel, 556 Jones/Geary 415-771-2006

$185 UP ROOMS Avl Wkly 735 Taylor St. Biltmore Hotel, 415-673-4277

$150/WK. St Moritz Hotel 190 O'Farrell St at Powell S. F. 415-397-4639.

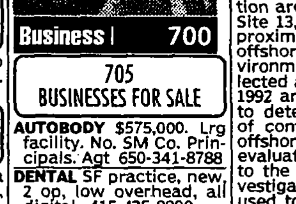
$160/Wk Up Clean/Quiet MERIT HOTEL 1105 Post/Polk 771-4602

$185/WEEK & UP WOMENS HOTEL 642 JONES ST 415-775-1711

$25/DAY $135/WK & UP GOLDEN EAGLE HOTEL No. Beach 415-781-6859

$30/Day $150 Week & Up WINTON HOTEL 445 O'Farrell 415-885-1988

$30/DAY $145/Wk & Up CIVIC CENTER HOTEL 20 12th St. 415-861-2373



Business | 700

705 BUSINESSES FOR SALE

AUTOBODY $575,000. Lrg facility. No. SM Co. Principals. Agt 650-341-8788

DENTAL SF practice, new, 2 op, low overhead, all digital. 415-425-8800

FOOD BUSINESS. Excellent. Civic Center SF. M-F oper. 650-992-7285

HALLMARK Gold Crown Store, Great SF neighborhood. grt lse. 650.759.0049

LIQUOR & DELI Establ 25yrs. 415-467-4690

RETAIL FLOOR COVERING BIZ in beaut. Burney CA. Exc family business oppty. $600K in gross sales annually. Business inv. $75K. Poss. purchase of bldg for $120K. 530-335-3880; 336-5412 E/Wknds

RV Sales-Inventory $160k Crescent City – asking $130,000. 707-954-5980

Video Store. Filipino/ American/adult. Guar profit. 650.302.8781

707 OFFICE FURNITURE

HAWORTH/ Herman Miller preowned cubicles. Design/install 6506854010

710 BUSINESS OPPORTUNITIES

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805 PUBLIC NOTICES

The Department of the Navy Announces a Public Meeting and 30-Day Public Comment Period On The Proposed Plan for Site 13 Offshore Sediments Naval Station Treasure Island

The Department of the Navy (Navy) will be holding a Public Meeting and invites public comment on the Proposed Plan for no action for Site 13 Offshore Sediments at the former Naval Station Treasure Island, San Francisco, California. The Navy issued the Proposed Plan pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Treasure Island (TI) is located in the central San Francisco Bay region, just north of the San Francisco-Oakland Bay Bridge. TI was leased to the Navy in 1941 and the Navy gained title to TI in 1943. Naval operations were shut down in 1997.

The offshore investigation area was defined as Site 13, consisting of approximately 538 acres of offshore sediments. Environmental data collected at Site 13 between 1992 and 2002 were used to determine the extent of contamination in the offshore sediments and evaluate potential risks to the environment. Investigation results were used to conduct an ecological risk assessment that concluded that offshore sediments at Site 13 did not pose an unacceptable risk to the environment.

The Navy has issued a Proposed Plan and is seeking public comment before making a final decision. The Proposed Plan calls for no action at the Site 13, Offshore Sediments. Federal and state regulatory agencies concur with this Proposed Plan.

30-Day Public Comment Period

The Navy will hold a **30-day public comment period through April 30, 2004.** During this time, comments on the Proposed Plan will be accepted. Comments may be submitted orally or in writing at the public meeting, date and time listed below, or you can mail written comments **postmarked no later than April 30, 2004** to:

NAVFACENGCOM Southwest Division, Attn: Ms. La Rae Landers, 1230 Columbia St., Suite 1100 San Diego, California 92101-8517 Or e-mail: larae.landers@navy.mil no later than April 30, 2004.

Public Meeting

The Navy will present its Proposed Plan during a public meeting scheduled:

Date: Tuesday, April 20, 2004
Time: 6:00 p.m.-7:00 p.m.
Location: Casa de la Vista, Building 271, Treasure Island

For More Information

The public is encouraged to review the Proposed Plan document, as well as other site-related documents, at the information repositories located at:

San Francisco Public Library, Government Publications Section, 100 Larkin Street (at Grove Street) San Francisco CA 94102. (415) 557-4400

Navy Southwest Detachment, 410 Palm Avenue, Building 1, Room 161, Treasure Island, San Francisco, CA 94120. (415) 743-4704 M - F 9:30 a.m. - 3:30 p.m.

Or the Proposed Plan can be viewed on the Navy's Treasure Island webpage at: http:// www.efdsw.navfac.navy. mil/Environmental/ TreasureIsland.htm.

SAN FRANCISCO PUBLIC UTILITIES COMMISSION DEVELOPMENT OPPORTUNITY
Request for Qualifications/Proposals
Approximately 8.7 acres in South San Francisco
Approximately 7.5 acres in Fremont
Approximately 6.4 acres in Mountain View
For a copy of the RFQ/Ps go to http:// sunset. ci.sf.ca.us/pbids.nsf and click on "Concessions and Leases" or contact Bruce Lymburn at (510) 834-6600 or blymburn@ wendel.com
Mt. View submittals due no later than 4:00 pm on April 7, 2004
Fremont and S. San Francisco submittals due no later than 4:00 pm on April 20, 2004
03/31/04, 04/01/04, 04/02/04

WELCOME

PROPOSED PLAN MEETING

APRIL 20, 2004

PLEASE SIGN IN

Name	Address	Affiliation
Darolyn Davis	655 Montgomery	Davis & Associates
Phil Bumme	8705 Elk Grove, CA	CH2M Hill
Gary Foote	2101 Webster Street Oakland, CA	Geomatrix
Kosia Grisso	155 Grand Avenue Oakland, CA	CH2M Hill
David Rist	701 Heinz Avenue Berkeley, CA	Cal-EPA / DTSC
John Baur	4005 Port Chicago Hwy Concord, CA	Shaw
Shannon Alford	4005 Port Chicago Hwy Concord, CA	Shaw
Ockerman	Box 51174 SF	

INSTALLATION RESTORATION
SITE 13 PROPOSED PLAN
OFFSHORE SEDIMENTS
FORMER NAVAL STATION
TREASURE ISLAND
SAN FRANCISCO

PUBLIC MEETING

TUESDAY, APRIL 20, 2004

CASA DE LA VISTA (BUILDING 271)
TREASURE ISLAND, CALIFORNIA

ORIGINAL

Reported by: Valerie E. Jensen, CSR No. 4401

JAN BROWN & ASSOCIATES
CERTIFIED SHORTHAND REPORTERS
476 Jackson Street, 2nd Floor
San Francisco, California 94111
(415) 981-3498

APRIL 20, 2004 6:19 P.M.

P R O C E E D I N G S

(On the record at 6:19 p.m.)

MS. LANDERS: Welcome. We're just getting started.

I'm La Rae Landers. I'm the Naval project manager. And we're here tonight to present the Proposed Plan for Site 13, which is the offshore sediments around Treasure Island.

So, what we would like to do is present a little bit about the environmental program and look at some information on the site background.

Then I want to turn it over to Cindi Rose. And she is our senior ecologist from Tetra Tech. She's going to go more in depth about the site investigations that were done. She'll talk about the ecological risk assessment and then go to the conclusions. And then we'll open it up for discussion and comments and questions.

So, back in 1980, there was a law passed that's called the Comprehensive Environmental Response Compensation and Liability Act. You'll hear us talk about it as CERCLA. So, under CERCLA, it sets up a process on how to identify, investigate and clean up

sites.

So, once the law was enacted, the Navy put together a Naval Installation Restoration Program. So, under that program, we can identify CERCLA sites. And, also, that program involves the petroleum sites, too.

So, Treasure Island did their base-wide preliminary assessment site investigation to look at sites in 1987. Originally, there were 25 sites that were looked at. Currently, we have 33 IR sites that have been identified. Of those sites, we have 22 that are in CERCLA, three that weren't carried over. We have eight that are in the petroleum program. Of the 22 CERCLA sites, we currently have 16 that are still active.

And then, also, to help us out with the environmental program, we have a Federal Facilities Site Remediation Agreement. And that sets up the roles and responsibilities. It gives some structure to the program and also sets a clean-up schedule.

So, this is just a quick overview of the CERCLA process.

And like I said, we go through and do a preliminary assessment and site investigation first to identify your sites. If there's a potential that more

investigation needs to be done, then you go into your remedial investigation phase. If you do have sites that pose a risk, then you'll go into your feasibility study phase, and you'll look at your remedial alternatives.

Then you go to the proposed plan stage and present what the clean-up method is that you're proposing. That's why we're here tonight.

Then, once you do that, you need to put your plan into a Record of Decision.

So, the clean-up partners that we work with -- like I said, we have a Federal Facility Site Remediation Agreement, an FFSRA, and the members of that are signatories that actual sign the documents. And that is the Department of the Navy, the California Environmental Protection Agency, Department of Toxic Substance Control. And the representative that we have is Mr. David Rist. And then we also have the Cal EPA Regional Water Quality Control Board. And the representative is Sarah Raker. She's in the back there. And they help us with the program. Then we have other Federal and state agencies that help with guidance and oversight. And that's the Cal EPA.

Specifically with Site 13, we have the U.S. Fish and Wildlife Service, we have the Cal Department of Fish and Game, we have the National Oceanic and

Atmospheric Administration, NOAA. That's easier to say.

Then, also, the CERCLA process provides for the public involvement. And part of that is the residents here on TI, the surrounding community. And we have what's called the Restoration Advisory Board. The meeting for that is later tonight. So, we would like you to, if you can, stay for that meeting.

Also, it provides for local authorities. One of the ones that helps us with the program is also the City of San Francisco.

So, a little bit of background on Treasure Island.

It's in the City of San Francisco -- the City and County of San Francisco. It was originally built in 1936 and 1937 for the Golden Gate International Exposition that was held here in 1939. The Navy leased the property from the city in 1941, and then they gained title of the property in 1943.

The base was closed here and Naval operations shut down in 1997. And now, currently, the re-use plan for the base is being coordinated through the City of San Francisco.

There are two offshore sites. There is Site 13, that we're talking about tonight, which is the

offshore sediments, and then there is also Clipper Cove Skeet Range.

We've got a site map over here. At some point, if you would like to, you can take a closer look.

So, both of these sites have been moving through the CERCLA process for investigation. Currently, based on the results of Site 13, the Navy is proposing the no action.

Site 27 is moving through the CERCLA process and now is in the feasibility stage. We're looking at different remedial alternatives that we'll, hopefully, present in a proposed plan here soon.

So, the purpose of the offshore investigation was to focus on the ecological risk assessment and to see if any of the sediments were posing a risk to any of the receptors in the bay. And they focus on the ecological because there are no direct exposure pathways for human receptors. So, the rest of the presentation tonight will focus on Site 13.

So, currently, in the CERCLA process -- it's a little hard to see -- we've gone through the preliminary assessment and site inspection, went through the remedial investigation. If there is no risk, you jump over the feasibility study and go right

to the proposed plan. After the proposed plan, we'll do the Record of Decision. And at that point, because we have no action, we can exit the CERCLA process.

So, what I would like to do now is turn you over to Cindi. She'll go more into the specifics of the investigation and the risk assessment.

MS. ROSE: Good evening. My name is Cindi Rose. I work with Tetra Tech. And I've been working on the Treasure Island offshore for about -- well, since 1996. So, I've been with this project for a while. So, tonight I want to just talk about the offshore investigations and the findings.

So, there have been four investigations for the offshore sites. It started in 1992 with the Phase 1, which was part of the storm water investigation where we collected -- let's see. We collected storm water from the outfalls and then sediment from the offshore adjacent to the storm water outfalls.

Then, in 1996, the additional -- we conducted an additional investigation based on the results of the 1992 results. The 1992 results showed that there was potential for some transport of contaminants from the onshore sites to the offshore. So, it was determined that additional investigation needed to take place. And that was the Phase 2 investigation offshore

ecological risk assessment. And during that investigation we collected sediment samples around the perimeter of TI.

I don't know how -- if you can see.

Most of these samples were part of the Phase 2 investigation. Those were sediment samples -- sediment grab samples, sediment core samples, bioassays and tissue samples. I'll get into a little bit more further on in the presentation describing the types of samples that were collected.

So, this was in 1996 that all of these samples were collected. Then, in 1998, 1997, the draft released investigation report was put out. That was put out to the regulatory agencies. And they reviewed it, and they identified an area where there were data gaps, where they didn't think that we had enough data to adequately characterize the site. And this was this area right here.

They wanted to make sure that -- this was Site 12. There was landfill and debris at this location. They wanted to make sure that debris had not been pushed offshore. There was some evidence that indicated that this might have happened.

So, we went out, and we collected core samples and grab samples adjacent to the landfill area

to identify whether or not there was a problem offshore. And there was not. But those results were then -- the results of the Phase 1, the Phase 2 and the Site 12 offshore investigation were all incorporated into the final Offshore Remedial Investigation Report. And that was in 2001.

In 2002, after the report had come out, there was another concern that, adjacent to the site to the landfill, the agencies thought we would like a little more data. We know the RI is complete, but if you can go out and just confirm that there is no migration from the landfill to the offshore sediments, then there will be enough data to characterize the site. So, there was this focused investigation in 2002 to determine if there was a problem with the landfill. Indeed, there was not, and it did not influence the results of the RIR, the Remedial Investigation Report.

So... So, the rest of my presentation -- those were the investigations that were conducted. So now I'll get into how the data were evaluated.

And as La Rae indicated previously, the focus of the investigation is really on the ecological risk assessment, because there was not a pathway to human receptors to subtidal sediments. So, the focus of the remedial investigation and the ecological risk

assessment -- it focused on tracking chemicals from the onshore sources to offshore sediments.

In conducting the ecological risk assessment, we followed the EPA guidance.

This is just a brief summary of the process that was followed.

The EPA guidance we -- there is a problem formulation, there is a risk characterization, and then there is risk management. Between the problem formulation and the risk characterization you do the characterization of exposure and effects.

So, the risk questions were -- we sat down and said, "What are the questions that we're asking? What are we trying to determine here at the site?"

And the questions were "Are the chemicals in the sediment adversely affecting bottom-dwelling organisms?" That's like crabs, organisms that live on the bottom in the sediment. "And are the chemicals in the sediment accumulating in these organisms to the extent that they pose a risk to their predators, higher trophic levels, like birds and animals, that eat them?" And then, finally, "What animals are we most concerned about?"

And those were the animals living on the sea bottom, the aquatic birds -- the cormorants, shore

birds, birds that live around the site that would be exposed to the sediment, and then Peregrine falcons. And the reason the Peregrine falcon was a concern is because it's a threatened and endangered species, and it would be exposed to sediments indirectly through the food chain.

And this is -- I don't know how well you can see this because of the sun, but this is just -- it shows the worm and the crab and the fish and the clam. Those are animals that dwell on the bottom in the sediment. So, they're exposed directly to the sediment.

And then, indirectly, there is a cormorant and a willet. Those animals are exposed indirectly to the sediments by eating these organisms. And, also, they can be -- they can ingest sediment, too, while they're ingesting their prey. And then the Peregrine. The Peregrine is exposed through its prey.

The ecological risk assessment includes an assessment of both exposure and effects. Exposure assessment is "What concentrations of chemicals are the animals exposed to at the site?" The effects assessment is "What concentrations of chemicals actually cause adverse effects?" So, that's what the exposure and effects assessment is.

Next we identified the assessment and measurement end points. The assessment end points are, again, "What animals are we most concerned about protecting? What population of animals are we looking to protect?" For example, bottom-dwelling animals. And then the measurement end point is "How do we measure adverse effects?"

And one way was a direct measurement of toxicity using bioassays that assess the effects on growth and survival and reproduction. And bioassays are laboratory tests where you collect the sediment at the site. You take it to the laboratory, and the organisms are actually exposed to the sediment in the laboratory in a controlled environment. So, the exposure and effects assessment tools that were used are toxicity benchmarks, toxicity testing, tissue analysis and food chain modeling. I'll go into each of these.

The toxicity benchmarks are benchmarks -- they're concentrations of chemicals in sediment or water that can cause adverse effects on animals, and they're based on literature and regulatory guidance. We have no-effect levels, which are -- those are concentrations at which studies have shown there are no effects. Low-effect levels are concentrations at which some type of effect has been observed in

laboratory tests.

So, the standardized bioassays -- those are the toxicity tests. Those are standardized laboratory tests.

At TI, for instance, we did an amphipod. That is like -- it lives in the sediment. It's a little shrimplike crustacean.

There is a picture of one right there.

The amphipod test -- we take the site collected sediment and take it to the lab. And then they're exposed to the sediment for about 28 days, and then their growth and survival is recorded. And it's compared to a site control, which is clean sediment.

Another bioassay we did was a sea urchin porewater bioassay. That bioassay -- we evaluated normal development.

Tissue analysis is where you go out to the site, and you actually collect the tissue.

We had it for the offshore sediment evaluation. We collected clams, crabs, small fish that birds would eat and worms. And the tissue concentrations were then used in the food chain model to assess the risk to birds from eating the affected prey.

Food chain modeling evaluates transfer of chemicals up the food chain. It assesses risk to birds from the ingestion of the affected sediment and prey. A site-specific dose using -- then a site-specific dose, using concentrations in site-collected prey and sediment, is indicated, and then the site-specific dose is compared to a toxicological reference value which is literature based. That's how the food chain modeling is used to assess the effects.

So, here is just -- here is the equation that we use to calculate the dose. Basically, it -- more simply, you take the site-collected sediment and the site-collected tissue data and model a dose to the willet -- model the dose to the willet and then use the modeled dose to the willet to model the dose to the Peregrine falcon.

Now, the next step is the actual risk characterization. That's where you evaluate all of the evidence that was collected. This is a weight-of-evidence process. You look at the strength of the evidence, how good was the data that was collected and just determine -- just look at all the different lines of evidence.

The next step is to look at the significance. What animals are most at risk? Where is the greatest

impact most likely to occur? And what does the impact mean ecologically? And then the risk characterization conclusions go into the risk management decision.

So, the weight of evidence -- the lines of evidence that we had for the site was a comparison of sediment and water analytical results to the toxicity benchmarks, the bioassay results and the factors affecting bioavailability. And bioavailability is just what is the potential for the chemical being, as simulated by the organism. And then there is food chain modeling -- the food chain modeling results. And then there is also the literature reviews.

So, the analytical results, which -- that's the chemistry from the sediment and the porewater. Chemicals were not widely distributed. The chemicals were not found at high concentrations when compared to the toxicity screening values, and no trends of contaminant migration were observed.

The bioassay results. We did -- we correlated the bioassay results with the chemistry, and it was found that survival -- that chemicals -- some of the chemicals, actually, that correlated with survival -- that's arsenic, copper and nickel -- they were below the known San Francisco Bay concentrations. In addition, locations that had low survival also had

low chemistry.

A bioassay, if it's -- if you pass your bioassay, you know everything is okay. The sediment is fine. It's not causing an effect. However, if you fail the bioassay, it's not -- it's not necessarily because of the chemistry. There are other factors that could contribute to the bioassay results. And this is the fine-grained sediment. Often, if the sediment is too fine, they can clog the gills of the organism and cause a problem. Acclimation to salinity. So, there were some confounding factors for the bioassay.

The polychaete bioassays were conducted. There were no adverse effects on survival or growth. And the sea urchin bioassay, the bioassay -- a lot of the results were actually confounded by ammonia. However, the bioassays that were okay, that were not confounded, the results were good for the porewater as well.

The food chain modeling results. The results of the food chain analysis did not suggest a risk to the willet, cormorant or Peregrine falcon from either ingestion of affected prey or direct exposure to the sediment.

In conclusion, the chemical levels present in the offshore sediment do not pose a level of risk to

animals that dwell on the sea bottom or to birds that warrants further action. No further investigation or action is recommended for the offshore area of Treasure Island. And the regulatory agencies that have been involved in the process all along concur with this recommendation.

The next step. The public comment period on the proposed plan ends on April 30. So, we need all comments by April 30, after which the no-action decision will be documented in a Record of Decision document that is signed by the FFSRA agreement members. And response to the public comments will be provided in the responsiveness summary in the ROD, and then the public notice in the local newspaper will announce the signed ROD. It will also be on the Treasure Island web site.

So, at this point, we'll address questions and public comments.

Public comment will go into the record. You can ask questions here, you can just walk up and give your comment to the stenographer or you can submit written comments on this blue sheet.

I think there's one back there. There's a stack of comment forms on the table back there.

So, are there any questions?

No.

MS. LANDERS: So, no comments.

I'd like to thank everybody for coming. Please take some time and look at the poster boards.

Like I said, tonight at 7:00 we do have a RAB meeting, if you would like to stay for that. At the RAB meetings we give a big overview. We try and bring the RAB members up to date of where we're at in each of the different sites, the overall program, discuss some of the issues if we've got documents out for review, go over the schedule.

So, we would invite you to stay.

Yes?

MS. SMITH: I'm sorry. You asked for questions, and I just have comments.

MS. LANDERS: Sure. Very good.

MS. SMITH: I'm a RAB member. I've been a RAB member since the beginning.

I just wanted a clarification on your presentation, which I thought, although I came late and I looked through it, was really quite very well presented.

You are not asking for any further investigation in the offshore areas, excluding the Skeet Range and excluding the parcel that was transfered

to the U.S. Coast Guard, which I believe is Site 11? Something like that. It's associated with Site 11.

MS. ROSE: The offshore parcel that was transfered to the U.S. Coast Guard was not really associated with Site 11, but it is in the Clipper Cove --

MS. SMITH: No.

MR. SULLIVAN: It was nearby Site 11, but it was in --

MS. ROSE: Actually, it's --

MS. LANDERS: It's down below.

MS. SMITH: It's over --

MS. LANDERS: Right there.

MS. ROSE: It's right here (indicating).

MS. SMITH: Those are two areas that are excluded from this transfer or this proposed plan?

MS. ROSE: Yes.

MS. LANDERS: Yes.

MS. SMITH: Then my other -- oh.

My other comment was on the ecological risk assessment that was done. That was done, I think, in '96, by Tetra Tech -- EMI at that point. And they had very bad scientific processes at that time. That's why the ammonia was so high. They also had a lot of dieoff for other causes.

So, this is more for the public and not now.

MS. ROSE: Okay.

MS. SMITH: But the problem with all that data was they had poor science.

There was a concern for the RAB. The RAB really wanted the whole process re-done, and we were not -- we didn't want it.

MS. LANDERS: Thank you. Any other comments or questions?

Well, thank you, everyone. We'll call the presentation to a close. Like I said, we'll put the notice out in the newspaper when the ROD is available.

(Off the record at 6:48 p.m.)

STATE OF CALIFORNIA) SS.
COUNTY OF ALAMEDA)

I do hereby certify that the hearing was held at the time and place therein stated; that the statements made were reported by me, a certified shorthand reporter and disinterested person, and were, under my supervision, thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the participants in said hearing nor in any way personally interested or involved in the matters therein discussed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal of office this 29th day of April 2004.

Valerie Jensen

VALERIE E. JENSEN
Certified Shorthand Reporter

APPENDIX D
PUBLIC COMMENTS AND DEPARTMENT OF THE NAVY RESPONSES

RESPONSES TO PUBLIC COMMENTS ON THE PROPOSED PLAN FOR SITE 13 OFFSHORE SEDIMENTS AT NAVAL STATION TREASURE ISLAND

The following are comments received from Arc Ecology via U.S. Mail on April 30, 2004, and the Navy's responses.

ARC ECOLOGY COMMENTS

1. **Comment:** **The No Action Plan proposed for Offshore Treasure Island is based in part on the conclusion that offshore sediments do not pose a risk to humans. We have continuing concerns (articulated in our comments on the Offshore OU RI) that the investigation of this site has not provided the necessary evidence or analysis to support this conclusion. The risk associated with fishing activities, raised by us and others, has been dismissed with references to the RI for the Onshore OU, which also fails to fully investigate the problem.**

Response: Human exposure to fish caught in the surface waters surrounding NAVSTA TI was not addressed quantitatively in the Offshore Sediments RI because risk cannot be readily attributed to activities at NAVSTA TI. Per the EPA's guidance for conducting HHRAs under CERCLA and the Navy's Policy for conducting HHRAs, the RI report determined that there are no complete exposure pathways for humans from exposure to submerged sediments. Contact with the sediments would be minimal to none. An occasional or incidental contact would not provide a direct exposure pathway for humans. Thus, a human health risk assessment was not conducted. It is well documented that ingesting fish caught anywhere in the San Francisco Bay, can result in adverse health effects (Office of Environmental Health Hazard Assessment [OEHHA] 1994).

In 1994 the Bay Protection and Toxic Cleanup Program performed a pilot study to measure concentrations of contaminants in fish in San Francisco Bay (San Francisco California Regional Water Quality Control Board [Water Board], 1995, Fairey and others, 1997). This study resulted in the issuance of a health advisory on fish consumption in San Francisco Bay by the California Department of Toxic Substance Control Office of Environmental Health Hazard Assessment (OEHHA 1994). Screening values to identify chemicals of potential human health concern were calculated for the study based on U.S. Environmental Protection Agency (EPA) guidance (EPA, released in 1993, revised in 1995). The Water Board study indicated that there were six chemicals or chemical groups that were of potential human health concern for people consuming Bay-caught fish: PCBs, mercury, dichlorodiphenyltrichloroethane (DDT), dieldrin, chlordane, and dioxins.

EPA defines the screening values as concentrations of target analytes in fish or shellfish tissue that are of potential public health concern (EPA 1995). Exceedance of screening values should be taken as an indication that more intensive site-specific monitoring and/or evaluation of human health risk should be conducted. Details about this approach are described in SFBRWQCB and others (1995). Because the EPA screening values were developed as a benchmark for sports fish, and there is already a Bay-wide fish advisory due to fish exceeding these values, risk to human health from fish comparison was not evaluated in the RI. The regulatory agencies concurred with this decision. However, to address this comment, chemical concentrations in fish tissue caught at NAVSTA TI for use in the ecological risk assessment were compared to EPA fish tissue screening values. As shown in the table below, NAVSTA TI fish tissue concentrations were well below the EPA screening benchmarks. NAVSTA TI fish tissue results data were based on a composite sample of nine sculpins and 2 gobys collected in Clipper Cove.

Contaminant	EPA Fish Tissue Screening Value (mg/kg wet weight)	NAVSTA TI Fish Tissue Concentration (mg/kg wet weight)
Mercury	0.233	0.02
Total Chlordanes	0.018	0.0042
Total DDT	0.069	0.016
Total PCBs	0.023	.0068
Dieldrin	0.0015	0.0004 J

* Dioxins were not analyzed at TI

The above comparison supports the RI conclusion that sediments around TI do not pose an unacceptable risk to the environment or ecological receptors. Based on EPA guidance, no further evaluation of human health risk is warranted (EPA 1995).

2. **Comment:** **Ongoing land use planning efforts have indicated that many people currently engage in water sports at Treasure Island and that their numbers are likely to increase. The risks associated with these activities have not been addressed.**

Response: The primary source of contamination to offshore surface waters at NAVSTA TI would potentially be from storm water runoff and onshore activities contaminating the sediment. As indicated in the RI report, the offshore sediment concentrations at NAVSTA TI were generally below San Francisco Bay Ambient levels (Water Board 1998). Sediment concentrations are also below the Region 9 human health residential soil

preliminary remediation goals (PRG) (EPA 2001). Region 9 PRGs are risk-based concentrations that are intended to assist in initial screening-level evaluations of risk to human health and are not as stringent as ecological sediment screening values. Additionally, pore water data collected for the RI, did not exceed ambient water quality criteria (AWQC) (EPA 1997, Water Board 1998, EPA 2000). Pore water is the interstitial water in the sediment and is representative of a concentration that may leach from the sediments under the proper conditions. AWQC are promulgated values that are protective of marine receptors. A human health risk assessment for the recreational water sports receptor was not conducted for Site 13 offshore sediments because there was not a complete exposure pathway between the sediment and recreational receptor. Based on EPA guidance (EPA 1995), no further evaluation of human health risk is warranted. The regulatory agencies concurred with this decision.

3. **Comment:** **Until all risks are disclosed, the Proposed Plan is invalid. We request that the Navy withdraw the Proposed Plan for Site 13 until they have modified the Onshore and Offshore RIs to bring them into alignment, and until all public comments have been properly addressed. The Navy should disclose actual contamination even if they are not required to remediate per CERCLA.**

Response: The determination of risks from offshore sediments within Site 13 at NAVSTA TI have been reliably evaluated and disclosed in accordance with CERCLA. Environmental data collected between 1992 and 2002 were used to determine the extent of contamination in sediments and evaluate potential risks to the environment. During these investigations, offshore sediment, storm drain sediment, storm water, and porewater were sampled for chemical analyses and the results were evaluated to determine the risk they might pose on ecological receptors. All potential sources of contamination impacting the offshore sediments have been fully investigated and assessed.

Per the EPA's guidance for conducting Ecological Risk Assessments (ERA) under CERCLA and the Navy's Policy for conducting ERAs, the RI determined the sediments at TI do not pose an unacceptable risk to the environment. Onshore sites are continuing through the CERCLA process.

RESTORATION ADVISORY BOARD (RAB) COMMENT

The following comment was received by a Restoration Advisory Board (RAB) members during the April 20, 2004, public meeting.

4. **Comment:** **The methodology for conducting the ecological risk assessment was deficient because many of the bioassay results were confounded by factors such as ammonia.**

Response: Per the EPA's guidance for conducting ERAs under CERCLA and the Navy's Policy for conducting ERAs, a weight-of-evidence approach was used to identify risk to the environment from the chemicals detected in the sediments at the site. Information and data included in the weight-of-evidence evaluation included: analytical chemistry for sediment and porewater, toxicity tests for multiple organisms, comparison with toxicity benchmarks, factors affecting bioavailability, food-chain analysis for multiple receptors, and literature reviews. The risk characterization process integrated this information and evaluated potential causal relationships among chemicals and adverse ecological effects. The risk characterization, thus, was based on the strength of the arguments developed using both site specific information and published scientific literature.

Toxicity in sediment can often be caused by natural factors termed "false positives" or "confounding factors" such as ammonia, sulfide, or grain size rather than actual contaminants, leading to inaccurate conclusions with respect to sediment toxicity. If a bioassay is successful, it supports that contaminants in sediment are biologically unavailable; however, if it fails, toxicity cannot be directly attributed to contaminants in the sediment. It is for this reason, that bioassays are just one of the lines of evidence used to evaluate risk at a site. For Site 13, toxicity tests were conducted on three types of invertebrates in two environmental media, and results were extrapolated to evaluate potential risk to all aquatic invertebrates at the site. Although, non-contaminant stressors, such as grain size, acclimation to salinity, and ammonia, confounded the interpretation of bioassay results, bioassays were just one of the lines of evidence used to evaluate risk at Site 13. The preponderance of data evaluated supported the RI conclusions, that the sediments at Site 13 do not pose an unacceptable risk to the environment.

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5090
BPMOW.LNL/0624
April 13, 2005

From: Director, Base Realignment and Closure Program Management Office West
To: Distribution

Subj: SITE 13 OFFSHORE SEDIMENTS RECORD OF DECISION, NAVAL STATION TREASURE ISLAND, SAN FRANCISCO, CALIFORNIA

Encl: (1) Site 13 Offshore Sediments, Record of Decision, Naval Station Treasure Island, San Francisco, California, April 7, 2005

1. The Site 13 Offshore Sediments Record of Decision is provided for your information and file (enclosure (1)). The Federal Facilities Site Remediation Agreement (FFSRA) signatories have concurred with the no action decision for Site 13 as indicated by their signatures on Page 4.

2. For further information, please contact Ms. La Rae Landers at (619) 532-0970.

for JAMES B. SULLIVAN
BRAC Environmental Coordinator
By direction

5090
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